IDAHO GEOGRAPHIC INFORMATION ADVISORY COMMITTEE

1995 ANNUAL REPORT

Hal N. Anderson, Chairman
Idaho Department of Water Resources

We're seeing major increases in digital data availability. I think we're going to see a revolution in our ability to actually use application packages like GIS for management and decision making. We're quickly moving beyond the database development phase that's held us for many years, to data integration and more sophisticated analyses. And GIS, as well as the National Spatial Data Infrastructure, will go away as unique applications or concepts. Digital information will be ubiquitous, instantly accessible, transition oriented and overwhelming. Nancy Tosta in *GIS WORLD* Vol.9 No.7 July 1966

About this Report: This report was produced to satisfy a requirement of Executive Order 92-24 that the Idaho Geographic Information Advisory Committee annually report to the Governor on its activities. This report is further intended to be a resource and informational document for all who are interested in, or use, mapping technologies. The report was prepared and edited by Colleen Van Winkle. She acknowledges her debt to previous preparers of IGIAC annual reports for providing a framework upon which to build. Sincere thanks go to all the members of Idaho's mapping community who contributed to this report; and apologies are offered in advance for any errors or omissions. The report was prepared for the World Wide Web by personnel from the Idaho Geographic Information Center, IDWR.

Costs associated with this publication are available from the Geographic Information Section of the Idaho Department of Transportation, 3311 W. State Street, Boise, Idaho 83703, in accordance with Section 60-202, Idaho Code.

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CHAIRMAN'S MESSAGE

by Hal N. Anderson, Department of Water Resources

It seems like only last week that I was putting thoughts together for the 1994 chairman's message. What is the saying about time flying when you are having a good time?

First, I would like to thank all the people who have worked for, and given their time in support to, the Idaho Geographic Information Advisory Committee (IGIAC). The voting board and subcommittee chairpersons, in particular, deserve credit for keeping this outfit going, as we say. I would also like to thank Colleen Van Winkle who put together this year's annual report. Not only did she have to learn a lot about mapping, GIS and GPS in a short time, she had to put up with me. I would also like to acknowledge Ron Cole and the Idaho Department of Transportation for printing this year's report.

Reflecting on what transpired in 1995 relative to mapping technologies in Idaho, we continue to see a reduced effort by the U.S. Geological Survey National Mapping Division and an increase in activity at the state and local level, including federal agencies. This evolution is as it should be but does increase the need for cooperation and coordination. Whether you represent a Forest Service or BLM District Office, a city or county government, a state agency, or an engineering firm, current geospatial information can be vital to your operation. Knowing the where, what and how of accessing and using geospatial data can dramatically increase productivity and/or profit potential.

We continue to experience an overall movement toward downsizing in government as well as in the private sector. Most often this means that funding, particularly for basic data programs like mapping, are reduced. Staff are also assigned more responsibility as positions are eliminated or not filled. Overall, we have the paradoxical situation of needing to cooperate and coordinate because we don't have the resources to do it all ourselves but don't have the time it takes to do the coordination. A primary function of IGIAC is to provide a forum to facilitate, and hopefully help with, the coordination of geospatial technologies in Idaho.

The IGIAC Board was very busy this year with activities associated with coordinating various projects, planning and putting on the annual meeting and producing the annual report.

The Metadata Subcommittee, in cooperation with the Idaho Geographic Information Center, was successful in acquiring a $25,000 grant to build a metadata server capability for Idaho. This effort will bring us a long way toward effective data sharing possibilities.

This year's annual meeting provided some valuable education and networking opportunities. In particular, we had a very interesting presentation by Alan Cox on the metadata and clearinghouse activities in Montana. The response was overwhelming that Idaho should work toward a similar approach. We also had a thought-provoking panel discussion from the IGIAC Board relative to a philosophical view of what geospatial data coordination really is.

As we look forward to the future, it seems the challenges are growing. In particular, with the development of desktop systems, there has been a significant increase in the number of geospatial data users. With more computing and data development capability power available to the individual, new coordination issues arise. We can only expect this trend to continue, which really means that now we, as individuals and not just data processing or mapping sections in our organization, need to be conscious of the need to coordinate.

In late 1995, Governor Batt convened the Info Tech '96 Task Force to review the objectives and strategies outlined in the Telecomm '92 Task Force Report, reach consensus on the validity and relevance of those objectives and strategies in today's environment and recommend action on the part of the appropriate entities and organizations to accomplish a revised strategic plan. The recommendations of the Info Tech '96 Task Force will in all likelihood emphasize coordination and cooperation, as well.

A future activity of IGIAC will be to define a role for mapping technologies in this very important information technology coordination effort.

Once again, thanks to all of you who took part or contributed to IGIAC activities this year. I hope to see you all at the annual meeting in 1996. If you have any information, concerns or questions, feel free to let me know. We always have need for folks who are willing and able to become actively involved; so don't be shy about volunteering.

EXECUTIVE SUMMARY

The Idaho Geographic Information Advisory Committee (IGIAC) was created through Executive Order to, among other responsibilities, review and assess developments in geographic information, mapping, global positioning systems and remote sensing technology that could be utilized to benefit the state's interest; assess GIS and image processing capability needs within Idaho; and advise the Governor on geographic information issues and needs for standards or policies for the state.

In 1995, the voting members of IGIAC met on a number of occasions to discuss developments and issues pertaining to various aspects of utilizing geographic information in meeting needs of people living and doing business in Idaho. Members heard reports from subcommittee chairmen regarding activities of the subcommittees and broadened the opportunity for persons outside the Treasure Valley to participate in IGIAC activities by developing a northern Idaho chapter. Members brought information acquired by attending out-of-state meetings and conferences and shared that information with other members, making it possible for wider information distribution without the cost of sending all the members to each of these meetings and conferences.

A significant achievement in 1995 was implementation of a National Spatial Data Infrastructure (NSDI) grant to provide for development of mechanisms and infrastructure to document and distribute geospatial data in Idaho. This grant was administered by the Idaho Geographic

Information Center at the Idaho Department of Water Resources. Goals of the project were to:

1. Implement nodes at key data developer sites and/or archiving facilities accessible through Internet, modem, or personal communication;
2. Refine the existing Idaho Metadata[1] Standard, (this became the Idaho Metadata Profile as work progressed), which was based on the "draft" Federal Geospatial Data Committee (FGDC) metadata standard to comply with the final version of the FGDC standard;
3. Implement the revised Idaho Metadata Profile and populate the key nodes developed in goal one with metadata.
4. Develop an implementation strategy for an Idaho Geospatial Data Clearinghouse designed to be consistent and compatible with the National Geospatial Data Clearinghouse and the recommendation of the Idaho Metadata Subcommittee.
5. Educate and train users and developers of geospatial data in using the node network established in goal one.

As a result of progress on this grant, another grant request was submitted for 1996 to carry on the work and to advance toward the overall goal of making GIS information more readily available throughout Idaho and the nation.

Among the major points of consideration during the year were the future direction of IGIAC, the need for a State Cartographer, the NSDI grant and proposal for additional year funding, and preparation for the annual meeting.

In November, IGIAC hosted its annual conference, which was attended by representatives of federal, state, and local agencies and private firms with interests in mapping. This meeting provided an opportunity for reporting on mapping activities and sharing information related to all facets of geographic information technologies. Among the more important activities were a panel discussion focusing on IGIAC's future direction and a presentation on how Montana manages its metadata storage and transfer activities, as well as reports from subcommittees.

Much of the day-to-day work of IGIAC is done at the subcommittee level, where experts with specific interests, and representing a wider variety of organizations than the constituent agencies identified in the Executive Order, participate in examining issues and making recommendations to the voting members.

Among the most significant activities of IGIAC during 1995 were:

NSDI Grant

Idaho Metadata Profile approved

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[1] Metadata is data about data. Metadata gives potential users of the data information to allow them to decide if the data will be applicable for the intended use. An analogy might be the footnotes and references for a historical reference work.

Development of subcommittee to carry on IGIAC activities in northern Idaho
Identification of a need for a central clearinghouse for archiving and distributing GIS information

ABOUT IGIAC

As early as the 1970's, the Idaho Mapping Advisory Council (IMAC) provided a yearly information exchange for state and federal agencies involved in mapping. IMAC also advised the USGS regarding topographic maps that were in greatest need of completion or revision and helped members efficiently plan aerial photography. In 1980, the Idaho Image Analysis Facility was established under Executive Order No. 80-4; the Department of Water Resources was designated the responsible agency for its operation.

With the rise of geographic information systems and remote sensing, mapping activity increased. To accurately reflect changes, the executive branch adjusted terminology associated with these activities. Executive Order No. 88-16 changed IMAC to the Idaho Geographic Information Advisory Committee (IGIAC). The order also created the Idaho Geographic Information Center (IGIC) within the Idaho Department of Water Resources (IDWR), to be managed in accordance with geographic information policies of IGIAC. Voting members are the Departments of Transportation, Water Resources, Fish and Game, Parks and Recreation, and Lands; the Divisions of Environmental Quality and Financial Management and the Tax Commission. Non-voting participation is open to other state and federal agencies, industrial and professional organizations, and academic institutions. The Order allows IGIAC to appoint subcommittees as needed, and requires that IGIAC submit an annual report to the Governor. IGIAC's responsibilities are to:

1. advise the Governor on geographic information issues;
2. review new geographic information, mapping, global positioning systems and remote sensing technology applications that might benefit the state's interests;
3. make recommendations to state and federal agencies regarding geographic information systems, mapping programs, global positioning systems and remote sensing;
4. assist in preparation of requests to appropriate federal agencies as a part of the diversified national mapping program; and
5. meet on at least an annual basis to review geographic information programs, and make recommendations for cooperation and resource sharing.

IGIC is directed to:

1. provide necessary coordination and technical assistance;
2. promote operational applications of digital image analysis and GIS;
3. provide systems management support to ensure proper operation and availability of digital geographically-referenced data for applications by various users;
4. provide technical assistance, in the form of consultation and training, to allow and encourage application of digital mapping techniques and equipment by employees of other agencies and organizations;
5. cooperate with, receive and expend funds from other sources for continued development and utilization of image analysis geographic information techniques; and

6. maintain an assessment of geographic information system and image processing capabilities needed within Idaho by existing and potential users; to cooperate with Idaho universities and other research institutions for development and implementation of improved capabilities resulting from research activities.

IGIAC RECOMMENDATIONS

In keeping with its responsibility to make recommendations to state and federal agencies regarding state policies and standards on geographic information systems, mapping programs, global positioning systems and remote sensing specifications, IGIAC makes the following recommendations:

To: Governor Batt

Encourage implementation of the *Idaho Metatdata Profile (version 4.0)* by all agencies (state, federal and local) that are creating geospatial information.

Encourage IGIAC and state agencies, including libraries, to develop and maintain a process for archiving, maintaining and distributing geospatial data for Idaho.

Promote development of a coordinated state mapping program. With significant reductions in federal mapping efforts and a large number of maps in Idaho in need of revision, concerted effort and resources need to be applied to updating and maintaining maps of Idaho. This should include exploring the possibility of hiring a full time State Resident Cartographer.

Encourage implementation and use of the Idaho standardized watershed boundary coverage by all state, federal and local governments. This coverage is currently available in preliminary form and should be utilized by agencies whenever possible to define watershed boundaries.

Provide for a budget to implement mandated activities of IGIAC. Among the requirements is the writing of an Annual Report, which is printed and distributed to members and interested participants in the GIS field. Temporary services of a writer are needed.

The State of Idaho, through IGIAC, should pursue with the Bureau of Land Management a statewide agreement covering exchange of all forms of electronic data that are available for release including GIS, GPS, GCDB data, and with any other forms of applicable digital data.

To: U.S. Geological Survey (USGS)

Create, maintain, and distribute a full, accurate, current database of map information about Idaho. To achieve this, IGIAC recommends USGS establish the following broad programs:

A program for systematically revising, updating, or replacing out-of-date, inaccurate, or non-standard 1:24,000 scale topographic quadrangle maps by the year 2000;

A program for completing and maintaining 1:24,000 scale and 1:100,000 DLG's based on the above quadrangle maps, in DLG-E or DLG-F format;

A program for collecting and distributing, through efficient on-line access, complete and current metadata on these and other analog and digital products;

An aggressive program for promoting cooperative projects, metadata collection, digital data quality control and standardization, and metadata and digital data distribution, with an office in Boise to facilitate this;

A program for assigning map maintenance responsibilities to cooperators, and for sharing these costs with them; and

A systematic program for collecting, acknowledging, analyzing, and responding to user reports of errors in both analog and digital map products, including more detailed version identification of digital data, efficient on-line access to error reports, and a mechanism for accepting user-corrected data.

IGIAC recommends the following changes in USGS and Federal orthophoto and aerial photograph programs:

Establish a cyclic program with regular (every five to ten years) flights of smaller blocks (100 to 600) of quadrangles;

Adopt flexible standards to allow 2-meter resolution from 1:80,000 photography, as well as 1-meter resolution from 1:40,000 photography, depending on user preference, resource values, and funding availability;

Through an office in Boise, aggressively pursue local cooperators for orthophotoquad revision; and

Work with other Federal agencies and local cooperators to fly 1:40,000 color infrared photography on a cyclic basis, in areas with intensive activity and change.

IGIAC recommends the following specific changes in USGS 1:100,000 scale mapping:

Draft all roads with a double-line symbol to allow for easier road interpretation and black-and-white reproduction;

Subdue (screen back) contours on new and reprinted maps;

Bring road classification into alignment with other agencies;

Add foot designations to metric spot elevations;

Add High Accuracy Reference Network (HARN) monument locations to maps; and

Complete compilation of the remaining contour plates for Idaho quadrangles.

Finally, IGIAC recommends the following specific changes in USGS 1:24,000 scale digital mapping:

1. Modify the PLSS data on DLG's so that the shorelines of water bodies are the approximate closure lines of the PLSS;

2. Compile flow direction, velocity, and connectivity for hydrographic data; and

3. Continue to cooperatively revise quadrangles with the US Forest Service.

DEVELOPMENT OF THE IDAHO GEOSPATIAL DATA CLEARINGHOUSE

by Robert Harmon, IDWR, and Luke White, Lockheed--Idaho Technologies Co.

clear.ing.house \-.hau.s\ n : a central agency for collection, classification, and distribution esp. of information (*Webster's* on-line dictionary)

The idea of an 'Idaho Geospatial Data Clearinghouse' has been a popular topic of discussion among attendees at IGIAC's annual meetings over the past few years. In fact, a clearinghouse is probably the driving force behind the Metadata Subcommittee and its work on the Idaho Metadata Profile: why else go to the effort of compiling metadata except to share it with others?

Beginnings

When the Metadata Subcommittee first convened in 1993 to begin compiling an Idaho metadata standard, an ancillary discussion quickly ensued around developing a mechanism and/or place where geospatial data users could retrieve metadata. It wasn't reasonable to go through the long process of compiling a metadata documentation standard if it was only going to be used in-house. You need to standardize documentation formats when you are going to share data, especially in a digital format. Thus, the idea of a clearinghouse began to take shape.

In the subcommittee's 1993 "Report to the IGIAC" (in the *1993 IGIAC Annual Report*), various proposals for a 'Metadata Clearinghouse' were presented for consideration by IGIAC with specific recommendations for each. They included: 1) not doing anything (not recommended); 2) IGIAC would collect metadata paper forms and provide copies in the *Annual Report* (recommended for immediate implementation); 3) a centralized clearinghouse would be created to maintain and distribute forms (recommended); 4) organizations would use the Internet to submit and/or answer queries concerning geospatial data (recommended); and, 5) creation of a centralized data depository to hold geospatial data in addition to their accompanying metadata (*not* recommended, at the time).

Coming up with a 'plan'

The Metadata Subcommittee spent most of 1994 following FGDC (Federal Geospatial Data Committee) progress on the Federal metadata standard and gauging its impact on Idaho efforts while trying to better define the clearinghouse concept. Luke White and Julie Brizzee, EG&G (now Lockheed--Idaho Technologies Co.), worked on developing a WAIS (wide area information service) server on the Internet where metadata text files could be queried and accessed. They received a $34,000 grant from EG&G to set up the server, input I.N.E.L.'s metadata into their Oracle database, and obtain a summer-hire teacher to develop a training package for metadata-WAIS users.

At the 1994 IGIAC Annual Meeting the Subcommittee received a lot of favorable reaction to the proposal for IGIAC to create and maintain a metadata clearinghouse on the Internet--most likely as a WAIS server. The Subcommittee met soon after to prepare an application for a NSDI-CAPP (National Spatial Data Infrastructure Cooperative Agreements Program) grant. As laid out in the grant application, the goal was to establish a clearinghouse of metadata documents (ASCII text files) on the State server that would be indexed and queried by WAIS through a World Wide Web (WWW) interface, such as Netscape Navigator or MicroSoft Internet Explorer. This embodied options #3 and #4 from the Subcommittee's 1993 clearinghouse recom-mendations. The State of Montana has set a fine example with its geospatial data clearinghouse. Alan Cox, of the Montana State Library, gave a presentation on it at the 1995 IGIAC Annual Meeting.

Where we are & where we would like to go

Upon receipt of the '95/'96 NSDI-CCAP Grant, the Metadata Subcommittee got down to the work of actually implementing the clearinghouse (see the Subcommittee's report in this report for more information). After some initial development 'challenges,' Luke & Julie, at Lockheed, got the 'clearinghouse' up and serving metadata from the I.N.E.L. Now, we have to start entering some metadata into it and train interested sites and users in Idaho on how to use it and get data to us to put into it.

The Subcommittee has already begun laying down the framework on how we would like the clearinghouse to develop. We've proposed in the next NSDI-CCAP application ('96/'97) to study and pilot the creation of a 'Idaho Geospatial Data Clearinghouse' that would hold geospatial data in addition to the metadata that has already been put out on the IGIAC Metadata (WAIS) Server.

1995 IGIAC VOTING MEMBER MEETINGS

IGIAC voting members meet as needed to discuss and decide issues. In 1995, IGIAC members met six times, in addition to the Annual Meeting. Dates and subjects of each meeting follow:

March 21, 1995: National Spatial Data Infrastructure (NSDI) grant application to update and implement Idaho metadata standard;
Formation of a chapter of IGIAC in northern Idaho;
Reports from GPS and Watershed subcommittees;
Funding received from USGS for a State Cartographer;
IGIAC's future role and the Executive Order regarding it;
A report on the National States Geographic Information Council (NSGIC);

A discussion regarding IGIAC and the executive order under which it operates;
Communications between and among IGIAC members and users.

June 27, 1995: Annual Report and recommendations
Executive Order Reauthorization
Funding of IGIAC and State Cartographer
Subcommittee reports
GIS news and communication
NSDI proposals

July 14, 1995: Meet with representative of Governor's Office
Discuss future of/direction for IGIAC

August 25, 1995: Annual Report
Organizational Alternatives
Annual Meeting
NSDI Metadata Project
NSGIC Meeting
Mapping Organization Inventory
Work Assignments

September 27, 1995: Annual Meeting
Organizational Alternatives
NSDI Proposal
NSGIC
Ada County Data Dissemination

October 11, 1995: Planning for Annual Meeting
Meeting Logistics
Panel Discussion

1995 IGIAC ANNUAL MEETING

The Annual Meeting was held November 7 and 8, 1995, at the National Interagency Fire Center in Boise. It was attended by 69 people during its two days (see attendance list in Appendix G). Here is the agenda:

Tuesday, November 7:

8:30 AM	Welcome and introductions	Hal Anderson
	USGS Briefing	Ingrid Landgraf
	Montana Metadata Program	Alan Cox
10:00-10:20	**Break**	
10:20	NSDI-Proposal & Metadata Program	Bob Harmon
12:00-1:30	**Lunch**	
1:30	IGIAC Panel Discussion	
	Topic-Mapping and GIS Coordination needs for Idaho	
	NSGIC	Hal Anderson
4:30	**Adjourn**	

Wednesday, November 8:

8:30 AM	Agency Reports (Cartographic/ Cadastral/ Thematic/GIS/Aerial Photography)	
	Federal	
	State	
	Tribal	
10:00-10:20	**Break**	
10:20	County	
	City	
	Industrial	
11:30-1:00	**Lunch**	
1:00	Subcommittee Reports:	
	East Idaho IGIAC	Dennis Hill
	North Idaho IGIAC	Randall Sounhein
	1:24K	Andy Little
	GPS	John Courtright
2:40-3:00	**Break**	
3:00	Subcommittee Reports continue	
	Watershed	Hal Anderson
	Metadata	Bob Harmon
3:50	URISA chapter report	Dennis Hill
4:30	**Adjourn**	

As part of the panel discussion, a questionnaire was distributed. For results of the questionnaire please see Appendix F.

1995 IGIAC Subcommittees

IGIAC has six subcommittees that focus on specific topics and areas of interest. They are:

1. Digital Data Subcommittee, concerned with digital mapping, from USGS DLGs, Forest Service CFFs, and other sources, chaired during 1995 by Tony Morse and Andy Little;
2. Metadata Subcommittee, concerned with developing metadata--data about data--standards for Idaho, and with documenting differences between the Idaho standards and the emerging federal standards, chaired during 1995 by Bob Harmon;
3. GPS Subcommittee, focused on applications and technology of global positioning systems, and on developing standards for acquiring and exchanging this data, chaired during 1995 by John Courtright;
4. Watershed Subcommittee, formed to create a common watershed boundary delineation for use by state, federal, and local governments, and by private industry, in managing natural resources, chaired by Hal Anderson;
5. Eastern Idaho Subcommittee, providing a meeting point for mappers in the Pocatello-Idaho Falls-Eastern Idaho region, who cannot attend IGIAC meetings in Boise, chaired during 1995 by Dennis Hill; and
6. Northern Idaho Subcommittee, providing the same function for mappers in the Coeur d'Alene-North Idaho region, formally established in February 1995, chaired by Randall Sounhein.

DIGITAL DATA SUBCOMMITTEE NEWS

by Tony Morse, Idaho Department of Water Resources

The subcommittees dealing with digital data at scales of 1:24,000 and 1:100,000 have been merged into one subcommittee. The issues surrounding digital data are pretty much the same regardless of the intrinsic scale of the data.

The general level of activity with digital data has continued to increase. Details on the activities of individual agencies can be found in the agency reports. However, the most significant project is probably that in the Department of Lands, which is engaged in converting all the 1:24,000-scale USGS DLGs and USFS CFFs into ARC/INFO format. This is an ambitious project that will be of enormous benefit to the Idaho GIS community

Editor's Note: Ingrid Landgraf of USGS indicated that the PLSS layer for the Coeur d'Alene 100K was not done in 1995. As things now stand, all work in that layer that will be done has been done, unless cooperative funding is generated to complete it.

BUREAU OF LAND MANAGEMENT IDAHO STATE OFFICE

STATUS OF BLM 100K MAPS

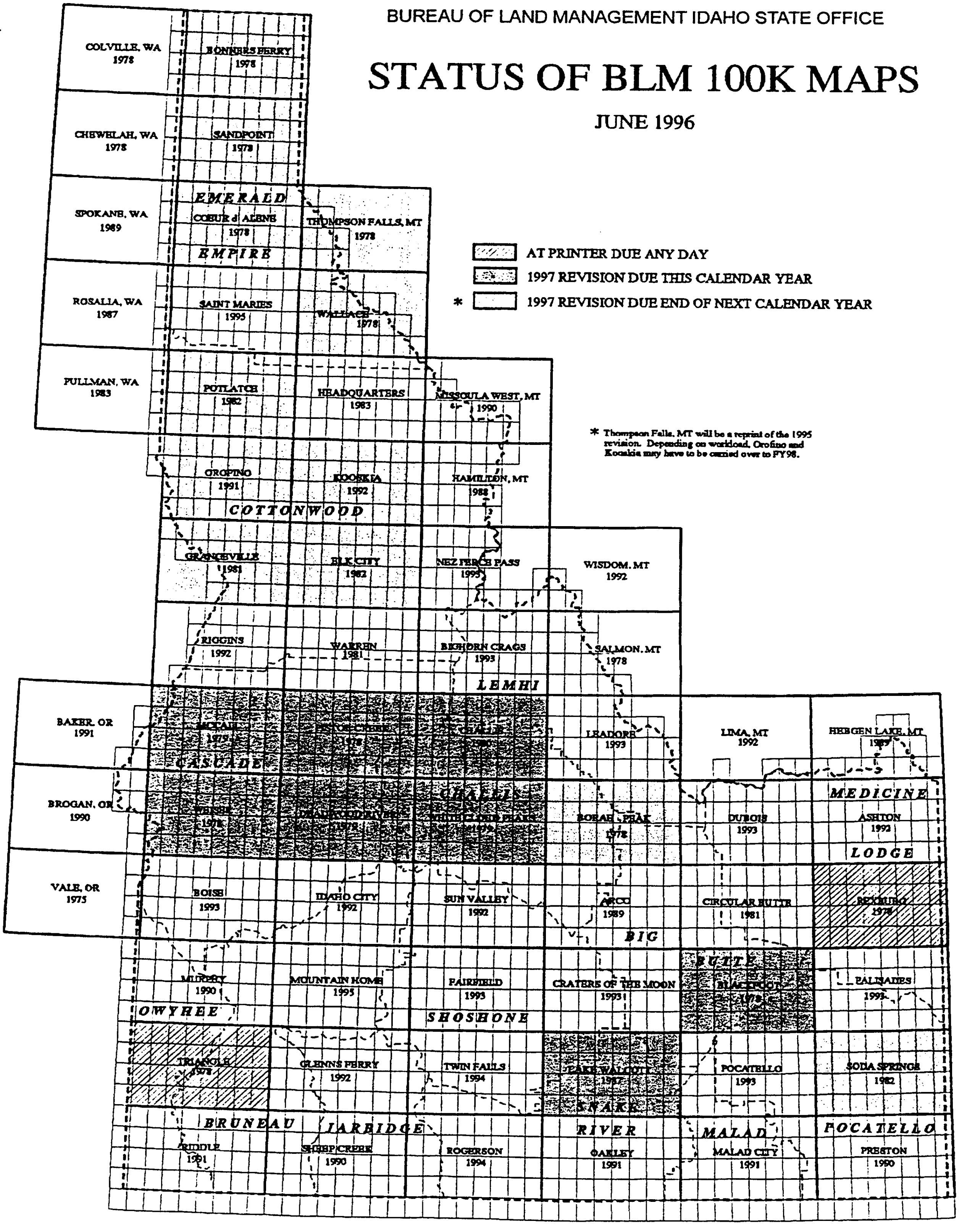
JUNE 1996

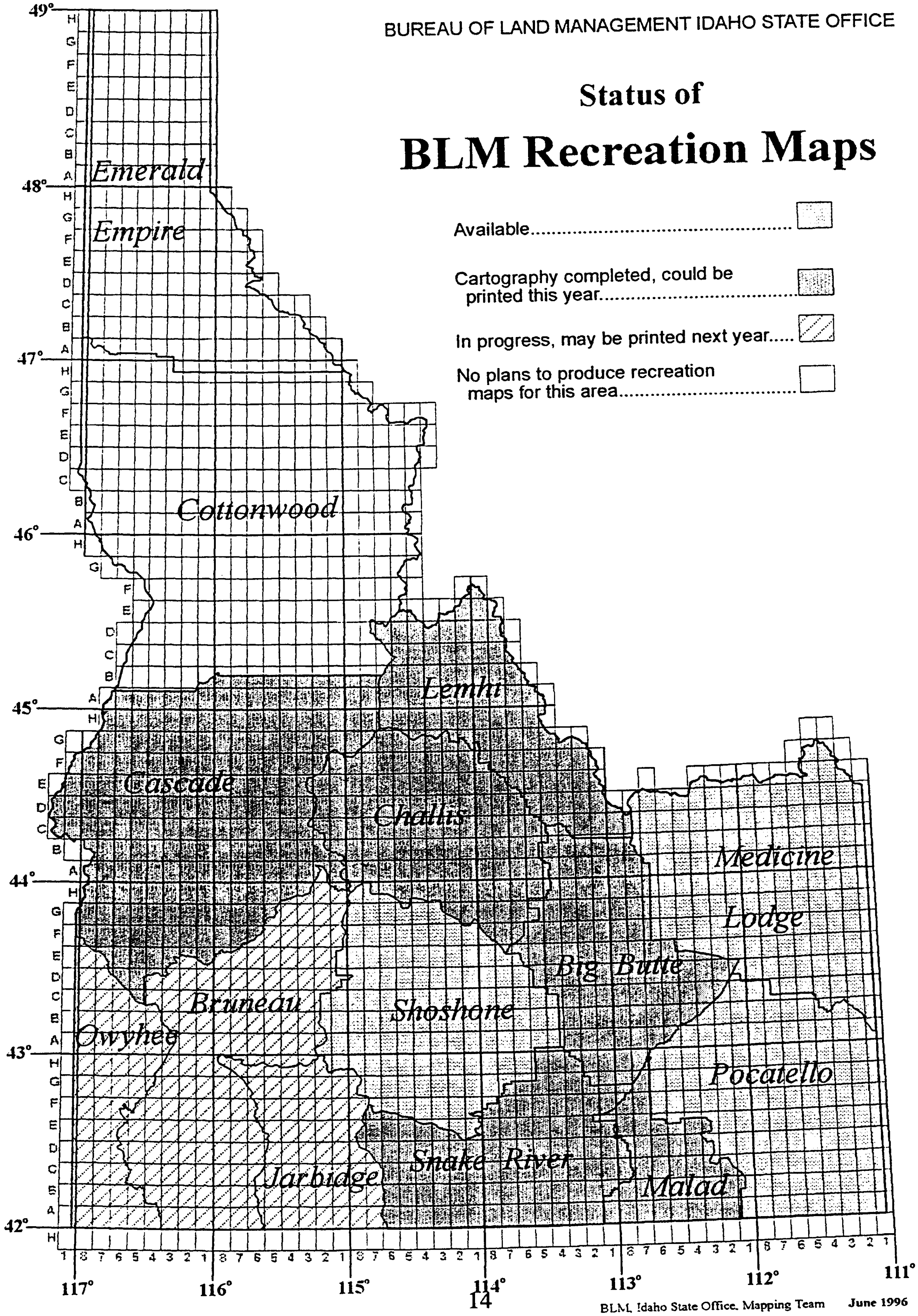
AT PRINTER DUE ANY DAY

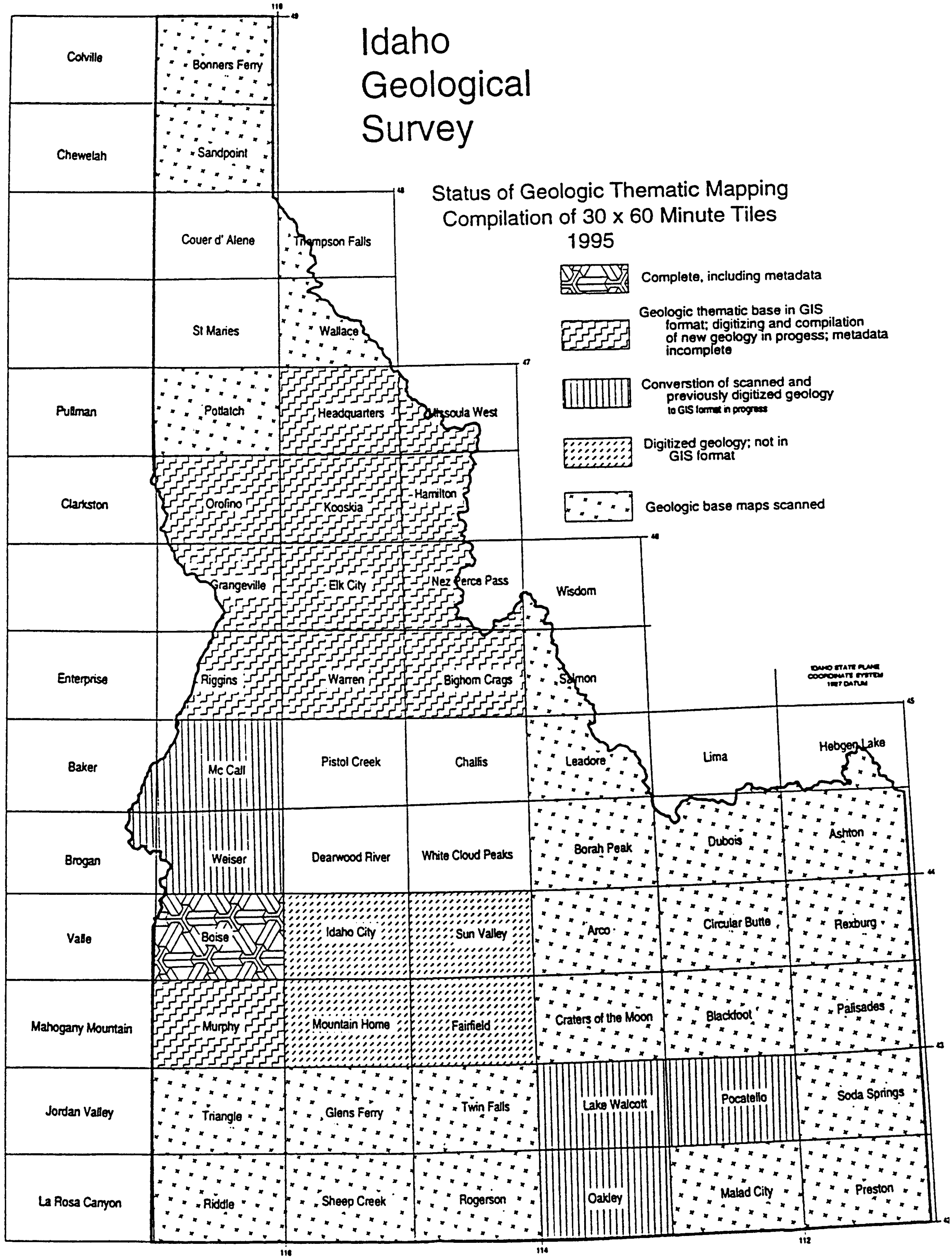
1997 REVISION DUE THIS CALENDAR YEAR

* 1997 REVISION DUE END OF NEXT CALENDAR YEAR

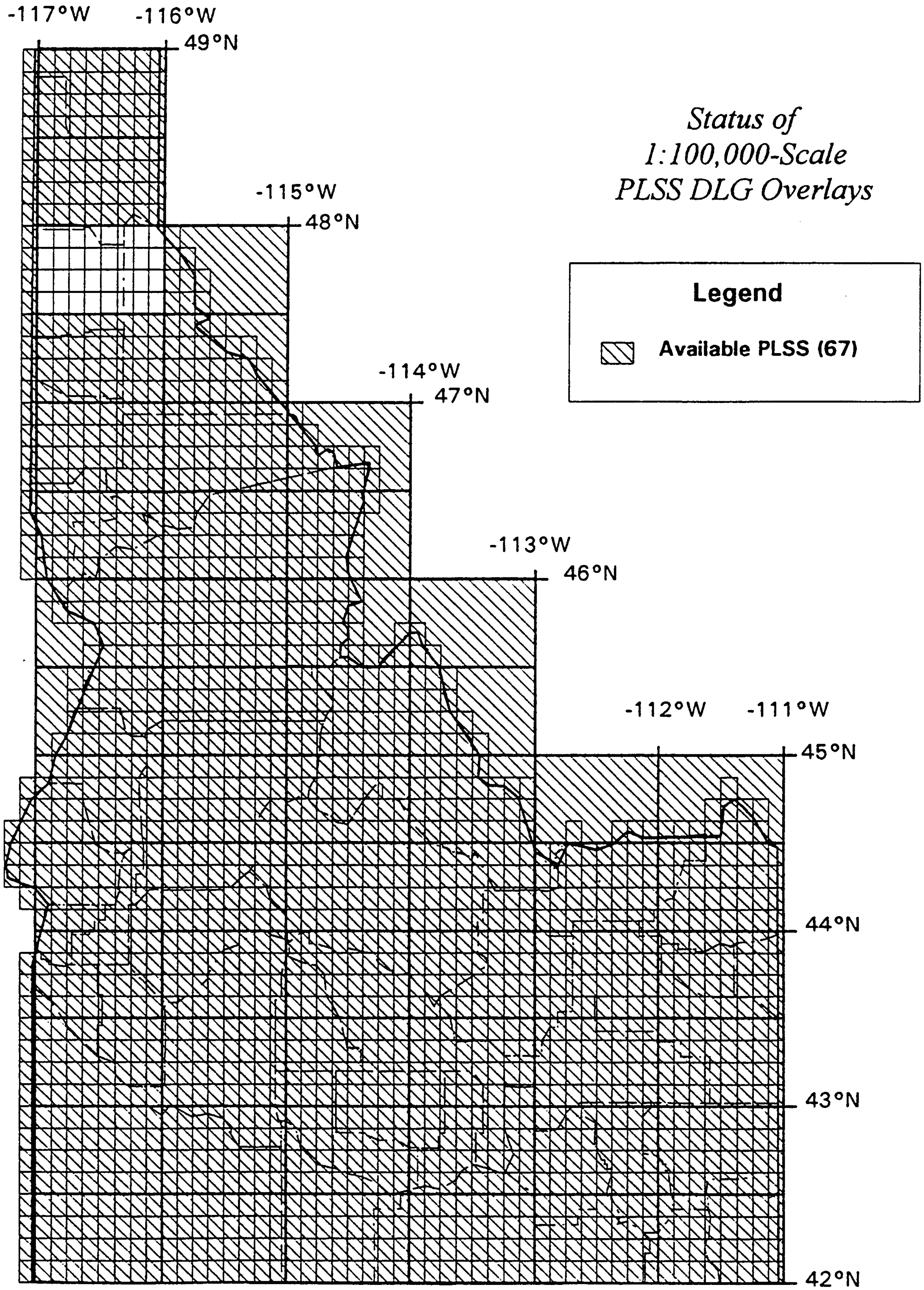
* Thompson Falls, MT will be a reprint of the 1995 revision. Depending on workload, Orofino and Kooskia may have to be carried over to FY98.

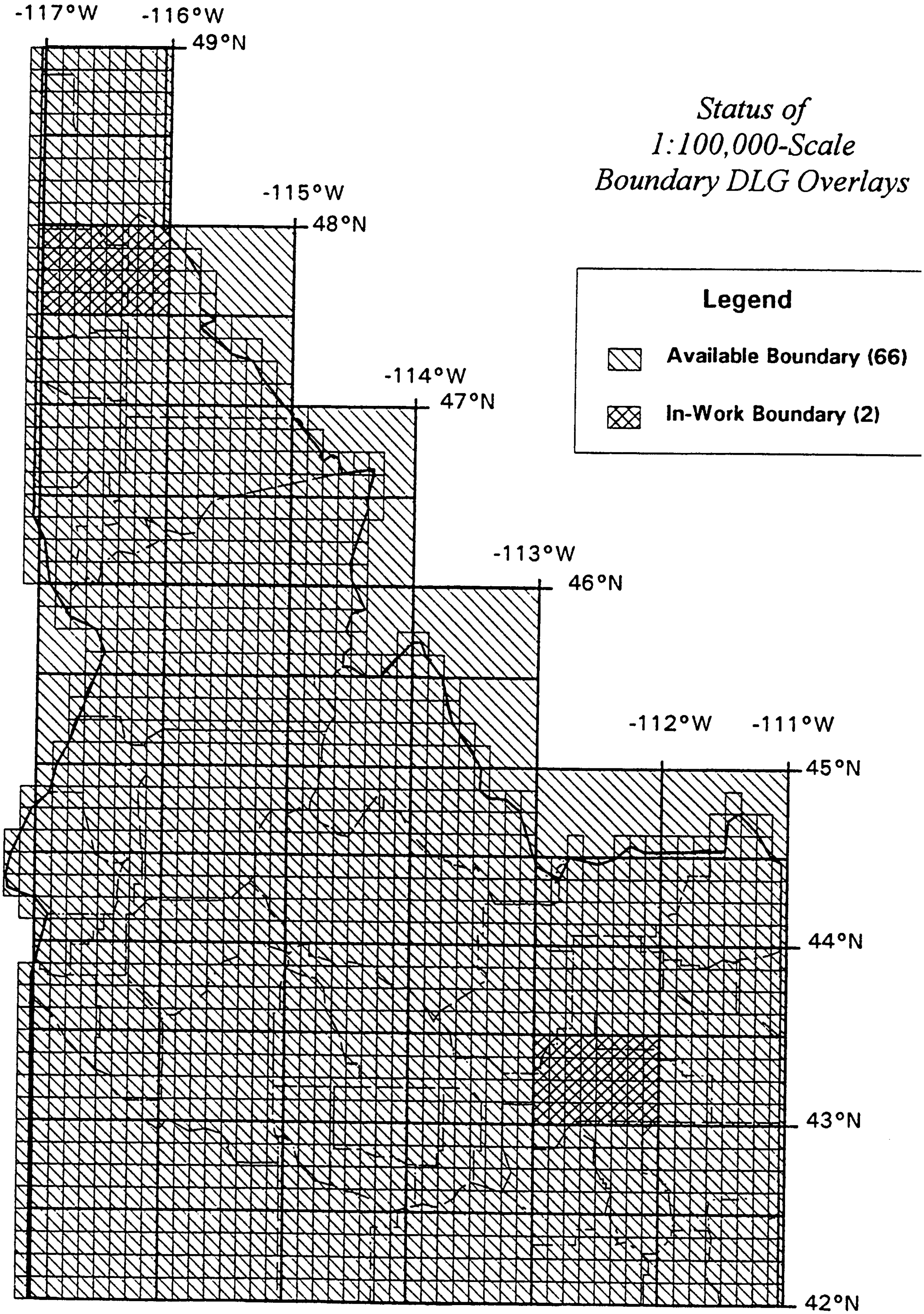



BUREAU OF LAND MANAGEMENT IDAHO STATE OFFICE
Status of
BLM Recreation Maps
Available
Cartography completed, could be printed this year
In progress, may be printed next year
No plans to produce recreation maps for this area
Emerald Empire
Cottonwood
Lemhi
Cascade
Challis
Medicine Lodge
Big Butte
Bruneau
Owyhee
Shoshone
Pocatello
Snake River
Jarbidge
Malad
49°
48°
47°
46°
45°
44°
43°
42°
117°
116°
115°
114°
113°
112°
111°
14
BLM, Idaho State Office, Mapping Team
June 1996

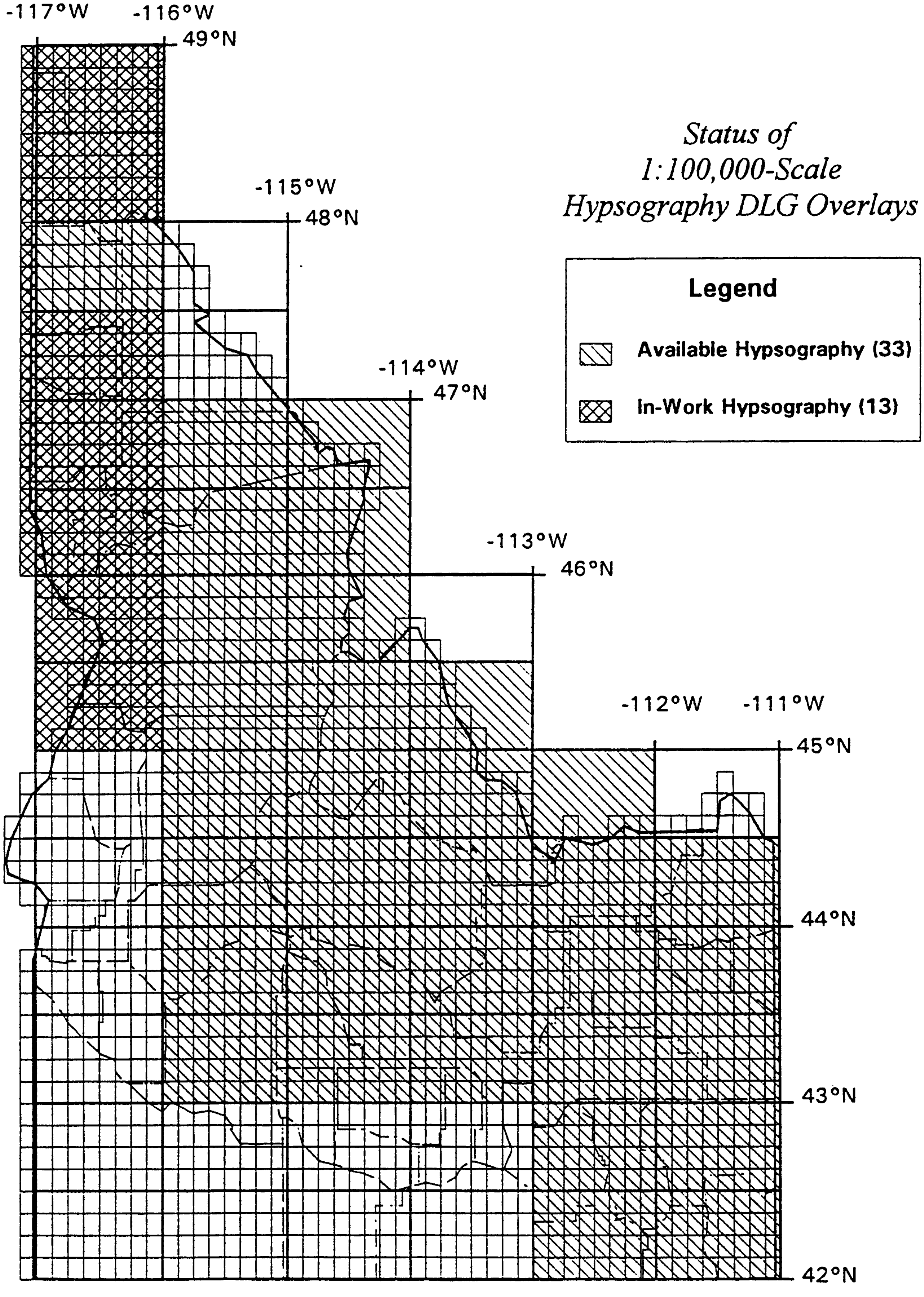

Idaho Geological Survey
Status of Geologic Thematic Mapping
Compilation of 30 x 60 Minute Tiles
1995
Complete, including metadata
Geologic thematic base in GIS format; digitizing and compilation of new geology in progess; metadata incomplete
Converstion of scanned and previously digitized geology to GIS format in progress
Digitized geology; not in GIS format
Geologic base maps scanned
Colville
Bonners Ferry
Chewelah
Sandpoint
Couer d' Alene
Thompson Falls
St Maries
Wallace
Pullman
Potlatch
Headquarters
Missoula West
Clarkston
Orofino
Kooskia
Hamilton
Grangeville
Elk City
Nez Perce Pass
Wisdom
Enterprise
Riggins
Warren
Bighorn Crags
Salmon
Baker
Mc Call
Pistol Creek
Challis
Leadore
Lima
Hebgen Lake
Brogan
Weiser
Dearwood River
White Cloud Peaks
Borah Peak
Dubois
Ashton
Vale
Boise
Idaho City
Sun Valley
Arco
Circular Butte
Rexburg
Mahogany Mountain
Murphy
Mountain Home
Fairfield
Craters of the Moon
Blackfoot
Palisades
Jordan Valley
Triangle
Glens Ferry
Twin Falls
Lake Walcott
Pocatello
Soda Springs
La Rosa Canyon
Riddle
Sheep Creek
Rogerson
Oakley
Malad City
Preston

Status of
1:100,000-Scale
PLSS DLG Overlays




-117°W
-116°W
49°N
-115°W
48°N
-114°W
47°N
-113°W
46°N
-112°W
-111°W
45°N
44°N
43°N
42°N
Status of
1:100,000-Scale
Boundary DLG Overlays
Legend
Available Boundary (66)
In-Work Boundary (2)

Status of 1:100,000-Scale Hypsography DLG Overlays



GLOBAL POSITIONING SYSTEMS SUBCOMMITTEE

by John Courtright
Idaho Division of Environmental Quality

The IGIAC GPS subcommittee held its first meeting of 1995 in early February with 25 people from state and federal agencies and private industry attending. The first table below shows GPS users and the types of receivers used in Idaho.

The meeting started with a discussion of how attendees were utilizing GPS to accomplish their locational tasks. This led to further discussion on how attendees might incorporate suggestions to improve upon their collection and recording of GPS data.

The U.S. Forest Service in McCall discussed how they distribute synchronous data through their bulletin board system (BBS). They also passed out literature on how to access their BBS.

Electronic Data Solutions discussed some of the updates and changes to both Trimble hardware and software. This explained why some attendees had difficulty in differentially correcting their data after the upgrade to the synchronous data.

Shamrock Kelly of the National Geodetic Service (NGS) spoke on the High Accuracy Reference Network (HARN) work that is occurring in Idaho and the surrounding states. He also spoke about the Continuous Operation Reference Station (CORS) sites that are being established in coastal states. Presently, there are no CORS stations in Idaho nor are any planned for the near future.

The next topic of discussion was the Receiver Independent Exchange Format (RINEX). With a growing number of GPS manufacturers and the proliferation of base stations, it was agreed that an independent exchange format was needed. RINEX is being refined by the NGS and will become the exchange format adopted by the manufacturers. The complicating factor facing the process is lack of adherence to RINEX standards by all GPS manufacturers. It was agreed that the subcommittee needed to further examine the issue. Attendees agreed to see what their manufacturers included in software to support the RINEX conversion and to provide this information to NGS in Washington for compatibility comparison with its version of RINEX. This was done with NovAtel and Motorola RINEX files and it was determined that Motorola files worked, while NovAtel conversions did not. Part of the problem centered on the fact that some GPS software needed both "required" and "optional" fields to complete differential corrections. Optional fields are not always collected and would cause the conversion from RINEX to proprietary format to fail. This issue still needs work to identify more of the problems facing the use of RINEX.

Attendees also discussed ways to make GPS data available. Options include using Internet and BBSs. At meeting time, few people had access to the Internet, yet everyone agreed this would change.

The location of base stations was also briefly discussed. Information on base stations that benefit Idaho is included in the second table below. Anyone desiring further information on GPS issues or the subcommittee can contact John Courtright in Boise at (208) 373-0271.

GLOBAL POSITIONING SYSTEMS IDAHO USERS

MAKE	BASE STATION	AGENCY	CITY	CONTACT	TELEPHONE
Trimble	Ada	Ada County Highway Dist.	Boise	Dorrell Hansen	345-7680
Trimble	Sho	Agricultural Research Svc.	Boise	Greg Johnson	334-1363
Trimble	McC/IdC	Boise National Forest(N.F.)	Boise	Darrel Van Buren	364-4147
Trimble	ITD	Bureau of Reclamation	Boise	Dan Lute	378-5272
Trimble	BLM	Bureau of Land Management	Boise	Tim Geary	384-3134
Trimble	BLM	Id. Army National Guard	Boise	Dana Quinney	384-6055
Trimble	McC	ID Conservation Data Center	Boise	Bob Moseley	334-3402
Trimble	ITD/BLM	ID Dept. of Water Resources	Boise	Ken Neely	327-5455
Trimble	BLM/Mis McC/KE	ID Div. of Environ-mental Quality	Boise	John Courtright	373-0271
NovAtel	Nov	ID Transportation Dept.	Boise	Dick Palmer	334-8222
Trimble	BLM/McC Mis	Idaho Power	Boise	Mark Druss	388-2925
Trimble	BLM/McC	National Biological Service	Boise	Deanna Dyer	385-4800
Magellan 5000		US Geological Sur-vey	Boise	Paul Woods	387-1353
Garmin GPS 100		US Soil Conserva-tion Service	Boise	Ron Abramovich	334-1614
Trimble	KE	Id. Department of Lands	Coeur d'Alene	Larry Morrison	769-1525
Trimble	WWP/KE	Kootenai County	Coeur d'Alene	Bruce Anderson	769-4401

MAKE	BASE STATION	AGENCY	CITY	CONTACT	TELEPHONE
Trimble	Mis	Panhandle N.F.	Coeur d'Alene	Dwight Makinson	765-7427
Trimble	Mis/McC	The Nature Conservancy	Deary	Janice Hill	877-1179
Trimble	Mis/McC	Nez Perce N.F.	Grangeville	Daryl Mullinix	983-1950
Motorola LGT1000	KE	Kootenai Electric	Hayden	Dennis Hinton	765-1200
Trimble	INEL	EG&G Idaho Inc.	Idaho Falls	Ron Rope	526-9491
Custom		NOAA	Idaho Falls	Gene Start	526-2743
Trimble	McC	Nez Perce Tribe	Lapwai	Jack Bell	843-2253
Trimble	McC	Id. Dept. of Fish & Game	Lewiston	Frances Cassirer	799-5010
Trimble	NwM	Potlatch Corp.	Lewiston	Dennis Murphy	799-1156
Trimble	McC	Payette N.F.	McCall	Mike Coffey	634-0649
Trimble	NwM	Northwest Manage-ment	Moscow	Vaiden Bloch	883-4488
Trimble	Mis	U.of Idaho	Moscow	Larry Lass	885-7629
Trimble	WWP/KE	Coeur d'Alene Tribe	Plummer	Perry Kitt	686-1800
Trimble	INEL	Bannock County Weed Control	Pocatello	Tracey Holbrook	234-4139
Trimble	ISU	Idaho State U.	Pocatello	Chuck Peterson	236-3922
Trimble	Mis/McC	Clearwater N.F.	Orofino	Steve Staab	476-4541

BASE STATIONS SERVING IDAHO

Name	Agency supporting	Type	Method	City	ST
Blank	No Base station data is used				
ACHD	Ada County Highway Dist.	Trimble	BBS	Boise	ID
BLM	Bureau of Land Management	Trimble	Diskette	Shoshone	ID
IdC	US Forest Service	Trimble	BBS	Idaho City	ID
INEL	INEL	Trimble	Internet	Idaho Falls	ID
ISU	Idaho State University	Trimble		Pocatello	ID
ITD	Idaho Transportation Department	Trimble	Diskette	Boise	ID
Jac	US Forest Service	Trimble	BBS	Jackson	WY
Ke	Kootenai Electric	Trimble	Diskette	Hayden	ID
Ketl	US Forest Service	Trimble	BBS	Kettle Falls	WA
Mis	US Forest Service	Trimble	Internet	Missoula	MT
McC	US Forest Service	Trimble	BBS	McCall	ID
MCSO	Missoula County Surveyor Office	Trimble	BBS	Missoula	MT
Nov	Idaho Transportation Department	NovAtel	Diskette	CdA, New Meadows, Shoshone, Rigby	ID
NwM	Northwest Management	Trimble		Moscow	ID
WWP	Washington Water Power Co.	Trimble		Spokane	WA

METADATA SUBCOMMITTEE

By Robert Harmon, Idaho Department of Water Resources

'95/'96 NSDI CCAP GRANT WORK

Much of the last year's activities centered around applying for and receiving a NSDI CCAP (National Spatial Data Infrastructure Competitive Cooperative Agreements Program) grant from the FGDC (Federal Geographic Data Committee). A synopsis of the proposal is in the *IGIAC 1994 Annual Report*. The proposal arrived at the FGDC in March and we were notified of our acceptance in July.

Metadata standard revision (to a profile)

We did not waste any time getting started on the work that we proposed doing for the grant. The Subcommittee met on a monthly basis, throughout the spring and summer, ironing out differences between the *IGIAC Metadata Standard, v.3.0*, and the *Content Standards for Geospatial Metadata* (FGDC, 6/8/94). The review went through three iterations:

1) resolving section and element names, content, and some structural differences in the IGIAC Standard;
2) adding some elements from the FGDC to the IGIAC Standard; and
3) creating additional elements to support raster data set documentation.

By late fall the Subcommittee had fully revised the document into the *Idaho Metadata Profile (v. 4.0)* with an accompanying paper form (Appendix A).

By late summer the Subcommittee was informed that it had received a NSDI CCAP grant from the FGDC for the '96 ('95/'96) fiscal year. With that in hand, the subcommittee developed a work plan to accomplish the tasks it had outlined in the grant proposal: complete revision of the IGIAC Metadata Standard/Profile, complete an ARC/INFO AML to assist in metadata capture, create and install a WAIS (Wide Area Information Service) server on the Internet, train contributors on the use of the IGIAC Metadata Profile and WAIS server, and obtain metadata from a variety of sites in Idaho and load that information on the IGIAC WAIS server.

Survey of sites in Idaho using geospatial data

At the same time that the Metadata Subcommittee was beginning its work on the '96 NSDI CCAP grant tasks, Hal and the IGIAC Executive Board decided to attempt to identify all public and private entities in Idaho that use geospatial data in any form. This would enable the IGIAC to better serve its constituents throughout the state. Sandra Thiel (IDWR) helped them by creating and distributing a brief user survey. Hal recommended that the Metadata Subcommittee also use the information to identify potential sources of metadata, with the participants' permission, for its NSDI CCAP grant work. At this time (5/96) the last of the surveys are arriving at the IDWR.

WAIS server development

In December, Luke White and Julie Brizzee, Lockheed--Idaho Technologies Co., began work on the IGIAC WAIS server on the Internet where metadata text files will be queried and accessed. A prototype is up and working as of this writing and is currently accessible through IDWR's home page on the World Wide Web at:

http://www.state.id.us/idwr/gis.html

Metadata profile & WAIS training

Before we can expect widespread use of the *Idaho Metadata Profile* and WAIS server, people need to be trained as we outlined in our NSDI CCAP grant proposal. Luke, Julie, and I have begun developing training materials, and identified a time and place to conduct the training--probably in July or August '96 at the Idaho Transportation Department.

'97 NSDI CCAP GRANT PROPOSAL

Once the Metadata Subcommittee has completed the tasks it identified in the '96 NSDI CCAP grant, the work has really just begun. The long term goal of the Subcommittee has been to create a central repository of geospatial data in addition to the metadata that has already been put out on the IGIAC Metadata (WAIS) Server. We would *also* like to establish links from the state to local (county) and regional (Columbia Basin) levels. Early this year the Subcommittee met to develop a '97 NSDI CCAP ('96/'97) grant proposal with the following objectives in mind: to integrate GIS capabilities at the county level,to field specific state programs to county governments, to form a multi-state (regional) data-sharing council and to prototype a state GIS data clearinghouse for all state agencies. For more information, see the text of the proposal beginning on the next page.

SUMMARY

The Subcommittee met a total of 9 times in 1995 and presented a report on its '96 NSDI CCAP grant at the IGIAC Annual Meeting. The goal for 1996 is to complete work on the '96 grant. Hopefully, we will also get a '97 NSDI CCAP grant to continue our work and make geospatial data and its documentation easier to retrieve for everyone.

NSDI PROJECT PROPOSAL

The Idaho Department of Water Resources was awarded a National Spatial Data Infrastructure Cooperative Agreements Program (NSDI CCAP) Grant in 1995 to establish a NSDI Clearinghouse Node on the Internet. The initial effort involved documenting and posting metadata for the majority of Idaho GIS holdings to an internet-based metadata server. While this activity is currently nearing completion, additional work needs to be performed to expand the system to educate and include local governments, to further data sharing and data integration among the various state agencies, and to establish an integration effort among various states in the northwestern United States.

Activity One - Integrating GIS Capabilities at the Idaho County Level

Most county and local government agencies in Idaho are at least looking at the capabilities of GIS and their application to local government problems. Some counties and cities in Idaho already have extensive GIS capabilities. There is a compelling need in Idaho to standardize GIS data acquisition and documentation to allow inter-government communication and cost-sharing among local government agencies and to facilitate data exchange between local governments and various state agencies.

GIS Training to County Governments

Idaho will establish procedures for implementing the FGDC metadata standard for GIS data set documentation for counties and pilot state agencies. Procedures will be established for preparing data sets and establishing standards for exchange of these data sets. A training program that will visit with each of the 44 counties in Idaho to help implement these procedures will be attempted with the Idaho State Tax Commission. Training will include a generic GIS start-up symposium for key members of each county government.

These generic symposia will be held at a regional level. Five regional areas have been identified for the symposia. At each meeting, the lead state agency will present the data sharing standards and criteria, and each local government will have an opportunity to make modifications to the process to reflect that county's needs. At the end of each set of presentations, comments from the meeting will be incorporated into the exchange standard for the State. The proceedings will be reflected in both a printed newsletter (many county and local governments are not on the Internet) and an on-line news server from a state of Idaho platform.

Specific Tasks:

1. Prepare the initial training package and generic guidelines for county and local governments.
2. Field the training package to each of five regional sites.
3. Incorporate local government change specifications and comments into the program.

4. Prepare three newsletters and an HTML-based homepage for dissemination of results of meetings and a list server to facilitate additional exchange among participants.

Activity Two - Fielding Specific State Programs to County Governments

The Idaho Transportation Department (ITD) has been identified to establish a test set of procedures for communication of GIS data to and from county and state government. ITD maintains a current set of all improved road conditions for the State. Local county governments maintain most of the roads in this data layer and improvements to the county-maintained road system is not currently reflected in the state-maintained data layer. ITD plans to distribute to each county the GIS data layer for that county and receive an updated roads data layer when counties make changes to their road system. Funds from this proposal will be allocated to develop and test a standard data exchange format and specific training and guidelines for these data layers.

A set of Idaho counties that currently have, or will soon have, GIS capabilities will be identified and asked to participate in the data exchange program. Training for specific program requirements will be prepared and fielded to these identified counties. Additional assistance will be provided by the state agency as needed to assure that data are documented in accordance with established standards and exchange techniques and that media, etc. are functioning as required to make the exchange program work. The results of this pilot program will be used to develop and field a statewide data exchange program in 1997. The results will also be documented in a final report summarizing the successes and difficulties encountered in this fielding activity.

Specific Tasks:

1. Develop the data exchange program and exchange standards.
2. Identify the counties willing and able to participate in a prototype exchange program.
3. Develop the specific training program and course.
4. Field training to the identified county governments.
5. Follow-up on training and additional program development.
6. Document the results in a final report to be used as the basis for fielding a statewide program in 1997.

Activity Three - Forming a Multi-State Data-Sharing Council

This type of cooperation and communication among states would directly contribute to the overall objectives of the NSDI. The states would work cooperatively in developing an interactive agenda, securing a meeting facility and managing the individual factors involved in this type of workshop. The initial overall goals of this workshop meeting would consist of the following:

1. Examine each state's Spatial Data Management Plan along with short and long range goals.
2. Discuss the development of uniform and easily accessible multi-state geospatial databases in accordance with the National Geospatial Data Clearinghouse concept.
3. Establish a technical working group to begin the process of identifying Internet links among the various states' geospatial data web sites.

4. Develop an approach to dealing with data set acquisition that overlaps state boundaries (for instance, watershed boundaries that overlap state lines).

Specific Tasks:

1. Contact and assemble the members of a multi-state regional council that are willing and able to participate in the regional council meeting.
2. Develop the agenda, locate and secure suitable facilities for the council meeting, identify speakers and prepare workshop materials.
3. Organize and manage the workshop.
4. Prepare and distribute the results of the meeting and the proceedings.

Activity Four - Establishing a state GIS Data Clearinghouse for all State Agencies

The purpose of this task is to establish a methodology, policy and physical server for a geospatial data clearinghouse on the Internet and prototype such an arrangement.

The IGIAC Metadata Subcommittee envisions an Idaho Geospatial Data Clearinghouse as a logical extension to the Idaho Metadata WAIS Server created with monies from the '95/'96 NSDI CCAP grant. The clearinghouse would be able to provide geospatial data documented with the Idaho Metadata Profile and served up as the result of a WAIS search of the clearinghouse.

The clearinghouse will be responsible for obtaining, maintaining and distributing geospatial data about Idaho that has been created by various public and private entities around the State. Contributing sites would also be responsible for apprising the clearinghouse of any changes in the data and providing up-to-date copies of the affected data sets.

The initial clearinghouse will involve all applicable state agencies. These agencies will work on this activity to establish data maintenance and data sharing policies, data collection and maintenance responsibilities, and actual clearinghouse operating procedures. The initial state agencies identified to participate in the GIS clearinghouse are: The Idaho Department of Water Resources, Idaho Division of Environmental Quality, Idaho Department of Fish and Game, Idaho Department of Lands, Idaho Tax Commission, and Idaho Transportation Department. For those agencies that are currently unable to serve their GIS information in a networked fashion, policy and procedures will be developed to assure that the clearinghouse maintainers will acquire and provide those data in a fashion consistent with the networked agencies.

Creation of the Clearinghouse Involves:

1. Formulating a methodology by which the clearinghouse will operate, including what hardware and software components are needed.
2. Crafting policies and procedures that all participants will adhere to regarding the contribution of data to the clearinghouse and providing regular updates.
3. Prototyping the clearinghouse to test and refine the hardware configuration and methodology developed as a result of 1 and 2 above.

Specific Tasks:

1. The IGIAC Metadata Subcommittee will identify those agencies in Idaho that will be responsible for the Idaho Geospatial Data Clearinghouse. Primary duties will include acquiring and maintaining the necessary hardware and software components of the clearinghouse. Initially, this may only require purchasing additional hard disks for an existing server (Task #3).
Additional linkages will need to be created to the Idaho Metadata WAIS server to enable it to serve the geospatial data that is being documented in the server at the user's request. The Metadata Subcommittee foresees the data being maintained in the SDTS (Spatial Data Transfer Standard, FIPS 173) format, depending on the number of GIS software packages that support SDTS at the time. All of these elements of a clearinghouse will be laid out in a methodology prepared by the Subcommittee.
2. The Metadata Subcommittee will also need to establish a preliminary policy for the operation of the clearinghouse. Specifically, rules and guidelines need to be in place regarding the submission and periodic update of data layers in the clearinghouse by contributing sites. This task will be revisited after a prototype has been created and in operation for a short period of time.
3. In order to make sure that tasks 1 and 2 are feasible, the Metadata Subcommittee and/or the designated clearinghouse management group will create a prototype clearinghouse. Initially, this will be an extension of the UNIX workstation that holds the Idaho Metadata WAIS server with additional hard disks and enhancements to the WWW software that make up the server now. Also, some geospatial data sets will be loaded in the system to test its functionality. The member agencies of the Metadata Subcommittee will provide the first data sets.

Activity Five - Reporting and Technical Coordination

Semi-annual progress reports and a final technical report will be completed and submitted to the FGDC Project Officer. Written reports will be prepared using the format described by FGDC.

A formal oral presentation will be made at the IGIAC annual meeting. Additional presentations may also be made at workshops, conferences, and other public meetings. The Idaho Project Director will contact the FGDC Project Officer to determine if additional presentations would be of interest.

WATERSHED SUBCOMMITTEE

By Linda Davis, Idaho Department of Water Resource

Editor's Note: The Watershed Subcommittee held no meetings during 1995. The following *addresses work done on the watersheds area.*

Idaho's watershed coverage consists of watersheds that are approximately 50,000 acres in size. The coverage is complete for all of the hydrologic units (USGS eight-digit cataloging units) that fall within the state of Idaho. This watershed coverage was created as a cooperative effort, with many of the land owners and managers. The major participants in this project were the Bureau of Land Management, U.S. Forest Service, Idaho Department of Lands, Boise Cascade Corporation and the Idaho Department of Water Resources. The purpose of this coverage is to provide a standardized set of watershed boundaries that will provide simplified reference, data collection and reporting.

The watersheds were captured in digital form, in a GIS (ARC/INFO) coverage. The watersheds are currently in a DRAFT form, to allow for review and incorporation of changes. A final version (Version 1) will be distributed in Fall, 1996.

The Idaho Department of Water Resources volunteered to keep, maintain and distribute the watershed delineation products. Copies or information about the watershed coverage can be obtained from Linda Davis at the Idaho Department of Water Resources (208) 327-7886 or from the IDWR Internet site at: http://www.state.id.us.idwr.idwrhome.htm. IDWR also has an "anonymous" ftp site that allows for easy downloading of the watershed coverage. Some of the information available on the Internet site include the criteria used to delineate the watersheds, a form to submit with recommended changes to the watershed coverage, and ftp access.

NORTHERN IDAHO GEOGRAPHIC INFORMATION ADVISORY COMMITTEE

Randall Sounhein
Panhandle Health District

Panhandle Health District (PHD) is currently continuing to develop GIS coverage for DEQ on the Priest Lake Project. This work should be done sometime in the summer of 1996. All data will then be transferred to DEQ's Boise office whose personnel will then transfer the data back to the Coeur d'Alene office to use in their Arcview PC.

PHD is also working with the Bonner County Planning Department to develop GIS coverages for use in their Arcview PC. This work is part of an ongoing GIS effort to help facilitate the establishment of a comprehensive plan.

Howard Merriman of the BLM in Coeur d'Alene stated that they are in the process of converting all of their old Automated Digitization System (ADS) files over into ARC/INFO format. This is a major task due to the vast array of data in the old ADS format.

Kootenai County is beginning to assign standard addresses to all county parcels in preparation for a count-wide enhanced 911 system. They have also converted all their data to a State Plane feet coordinate system and brought orthophotos of the western half of the county online.

The county's future plans include providing Internet access to county data, developing county-wide street address range data, maintaining countywide parcel id (pin) data and digitally segregating their assessor data.

Tom Deckart of the Idaho Department of Lands (IDL) has recently set up a Windows NT network for their Coeur d'Alene office. He is also on the multiple-agency team participating in the development of a statewide watershed cumulative effects map.

Liza Fox of the USDA-FS Nez Perce National Forest in Grangeville has taken a GIS position with the Department of Forestry's image processing center at the University of Idaho.

Frank Roberts of the Coeur d'Alene Tribe is currently working on his MS in Forestry at the University of Idaho and plans to be done sometime in 1996.

Dennis Hill and Loudin Stanford facilitated the Northern Rocky Mountain Chapter of URISA's Spring meeting, which was held at the University of Idaho, Moscow. This meeting was informative and well organized. Good job gang! Some of the highlights at the meeting consisted of presentations on "Spatial Decision Support Systems" and "Integration of Aerial Images into GIS Visual Landscapes Assessment", by Professors Piotr Jankowski and Toru Otawa, respectively, and a presentation of Arcview III by Terry Bartlett of ESRI.

SOUTHEAST IDAHO GEOGRAPHIC INFORMATION ADVISORY COMMITTEE

[Editor's Note] The Southeast Idaho Geographic Information Advisory Committee (SEIGIAC) has been relatively dormant during 1995. A number of the people in SEIGIAC have participated in the activities of the Urban and Regional Information Systems Association (URISA). For details of those activities please read on.

URBAN & REGIONAL INFORMATION SYSTEMS ASSOCIATION NORTHERN ROCKIES CHAPTER

by Dennis Hill, City of Pocatello

1995-1996 has been a busy period for the Geographic Information Organizations in Idaho. There were three meetings of URISA-NRC in various locations throughout Idaho to showcase different levels and types of applications for what we fondly refer to as GIS.

In October, we met at Lockheed-Idaho's GIS shop in Idaho Falls. The folks there have developed several applications for GIS that differ from traditional uses such as parcel, natural resource, etc. Luke White, Julie Brizzee and Gene Heaton have developed a personnel and equipment application, which keeps track of where different individuals are located in a vast company. The application also identifies where company computer resources are located, thus indicating where to look for particular computing needs. In the afternoon we took a trip out to the laboratory located on the Arco desert and saw some of the facilities we all read about in the newspaper. It was an interesting day that provided information about different uses of technology.

A January, 1996 meeting was held in Boise at Idaho Power Company. Baron Buckingham demonstrated how Idaho Power is implementing GIS technology with a utility slant. Baron has been mapping Idaho Power's transmission and distribution network using a combination of AUTO/CAD techniques and ARC/CAD. We also toured the GIS facilities located at Idaho Power. Luke White and Julie Brizzee presented a metadata session that addressed some concerns that many users have. In the afternoon an organizational, motivational presentation provided useful information to better use time and resources.

Spring brought a meeting in Moscow at the University of Idaho. Loudon Stanford put an excellent program together that more or less demonstrated the various university department's endeavors to encompass GIS into the college curriculum. One session demonstrated an application that combines the power of GIS into a decision-making center. These decision-making centers are being implemented around the country. Combining GIS capabilities into such a program increases the capability of the participants to come to a group decision. A round table discussion at the end of the day provided an open arena to discuss many of the up-and-coming issues that face Idaho.

July will bring URISA 96 to Salt Lake City, Utah. This conference will bring to our area **the** experts in the GIS industry. Many of us in the GIS community will participate in this national conference and will, no doubt, gain from the experience.

IDAHO GEOGRAPHIC INFORMATION CENTER 1995 REMOTE SENSING PROJECTS SUMMARY

By Tony Morse, Department of Water Resources

The Idaho Department of Water Resources is the lead state agency for remote sensing as well as GIS, and houses the Idaho Geographic Information Center (IGIC). IGIC regularly works on a variety of remote sensing projects.

Some of the projects IGIC worked on during 1995 include:

1. The Boise Valley Project (Bill Kramber, Genna Ashley, Terra Frei, Chris Cowling)

This is a long-term project in cooperation with the US Bureau of Reclamation. The goal is to map the change in irrigated acreage between about 1915 and 1994. The project involves digitizing plat maps drawn in 1915, and 1:12,000-scale, CIR, aerial photos taken in 1994. The plat maps show land originally authorized for irrigation by the BOR. The aerial photos are being scanned, map-registered, and mosaicked. The mosaicked images serve as the base on which polygon boundaries of landuse and land cover are drawn. The anticipated completion for the mosaicking and interpretation is the end of 1996.

2. ARCView training (Bob Harmon)

IGIC arranged ARCView training through BSU's Center for Management Development. Bob achieved ESRI certification as an ARCView trainer early in 1995, for the purpose of training IDWR employees. He taught four ARCView sessions at BSU/CMD to IDWR employees, and three sessions to the general public. BSU/CMD now offers regularly-scheduled ARCView training to the general public using ESRI employees.

3. Hydrography repair (Sandy Thiel, Linda Davis)

The 1:100,000-scale hydrography for Idaho has been repaired and enhanced. The repair involved adding missing arcs and orienting all arcs to point down-stream. The enhancement involved assigning a unique segment number to each stream reach, which was done at IDFG, and generating an annotation coverage for all the stream names. The segment number was added to the river mile for the beginning of the reach to generate a river-reach code. The work on 100K hydrography is now completed.

4. Metadata (Bob Harmon, David Palmer)

Work on the metadata project is covered in detail in another part of this report.
5. Payette River Water Accounting (Mike Verdun, Bill Kramber)

IDWR develops and maintains water accounting models for several river basins, one of which is the Payette basin. IGIC and the Hydrology Section are cooperating to convert accounting model into ARCView. The geographically-referenced data included in the ARCView project are 1:100,000 and 1:24,000-scale maps, 1:40,000-scale color infrared photographs, the Public Land Survey, hydrography, and boundaries of the lands served by each water right. Other data include scanned color photographs of each diversion structure, scanned reports from field examinations, and the point of diversion and place of use for each water right, along with all water-rights data.

This project has two purposes. The first purpose is to give a graphical capability to what has previously been only a numerical model. The second purpose is to demonstrate the utility of managing water rights, basin-wide, using GIS.

6. Water Rights Demonstration - West Boise (Bob Harmon, Bill Kramber, Mike Verdun)

Personnel from the Western Regional Office of IDWR requested help from IGIC in evaluating the number of irrigated acres associated with several water-right transfers west of Boise. IGIC personnel had scanned, map-registered, and mosaicked a series of 1:12,000 color infrared photographs of the area. The mosaicked photos were overlaid with the Public land survey to the quarter-quarter section level, and linked to water rights and claims data from the Snake River Adjudication. Personnel from Western Region could quickly evaluate the acreages associated with the transfer applications.

This ARCView project was shown to Governor Batt when he toured IDWR. It remains one of our most effective demonstrations of the power of GIS to solve the simple yet vexing problems encountered everyday by IDWR personnel.

TO ACCESS INFORMATION FROM THE STATE FTP SITE

This is how to get GIS data from the State ftp site. Pass it on to anyone who calls looking for data (and has an Internet connection). Also let them know that there is a README file in every subdirectory which briefly describes the data sets in that area and an INDEX file with the directory listing (ftp directory in Section II). IDWR plans to create links to the ftp site from the web page in the near future.

I. Instructions for getting data

From the DOS (with network on) or Unix prompt:

ftp ftp.state.id.us {or, ftp 204.200.63.37 }
anonymous
<your email address here>
cd /pub/gisdata
image {or binary; sets mode of file transfer}
ls {to view directory/file structure}
get <file name> {to retrieve a file from the ftp site}
bye

From a web browser:

Getting ftp access through a Web browser, such as Netscape Navigator or MicroSoft Internet Explorer, is very easy since it's all point-and-click after you have typed in the ftp address.

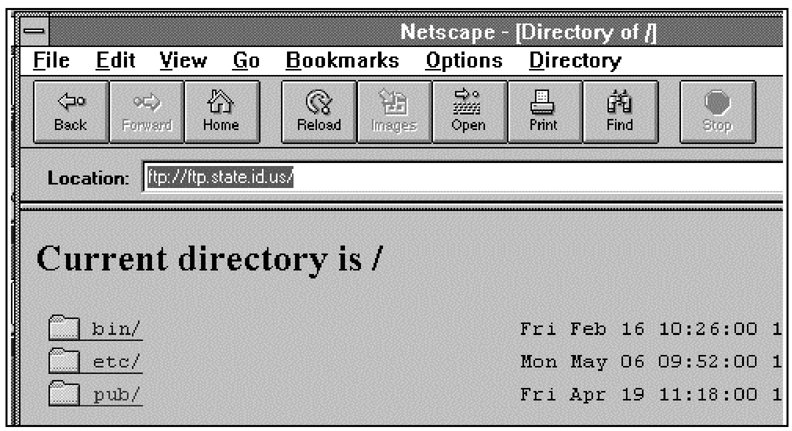


Figure: Upper-left portion of Netscape WWW browser

1. Start by clicking on the URL address portion of the browser which is denoted by the term 'Location' (Figure). Type in the Idaho ftp address as follows and hit <Return>: ftp://ftp.state.id.us/ {or, ftp://204.200.63.37/ }

2. Once the page is open you can navigate the directory structure by clicking on the folder icon or subdirectory name that you want to go to (Figure). To download a file at any point, hold down the <Shift> key and click on the file name in Netscape; or, click on the file with the right mouse button in MS Internet Explorer. In either case, choose the 'Save As' option and the web browser will prompt you for a name and location on your local machine to store the incoming data. The data are transmitted in the 'image' or 'binary' mode referred to in section I.A, above. NOTE: If you simply click on the filename (or associated icon), the contents will be displayed. This is a quick way to view a README or INDEX file.

II. FTP directory structure (as it applies to GIS data):

```
ftp login starts at '/'
                 |
                 /pub
 ________________|___
|         |         |
/gisdata   /outgoing  /incoming
|____________________________________________________________
    |         |      |       |        |         |    |       |    |
    /statewid  /hydro  /byquad  /imagery  /planning  /gwm  /macros  /tics  /projects
```

AERIAL PHOTO AND ORTHOPHOTOQUAD NEWS

Orthophoto Quadrangle Production Orthophoto quadrangles (OQs) are mostly 1:24,000 scale photo image maps formatted to cover the same area as the standard 7.5-minute quadrangle maps. Some OQs are made to other scales and some agencies use a township format.

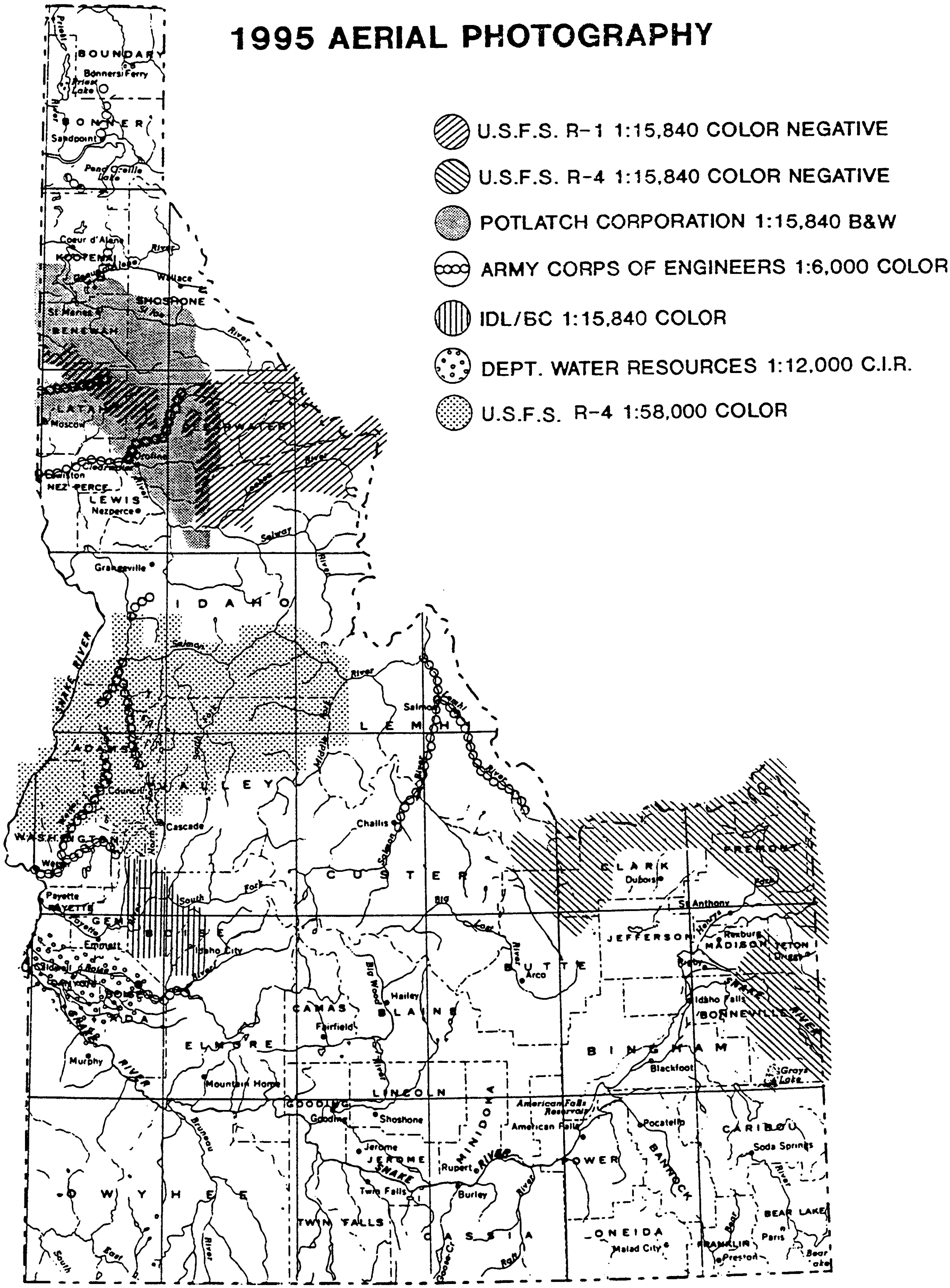
Originally conceived as a temporary stand-in for standard maps, orthophotoquads, as they are called, have found a niche as a replacement for high-altitude photo maps. They have been adopted and maintained as a base by the U.S. Bureau of Land Management, the U.S. Forest Service, the U.S. Natural Resources Conservation Service, U.S. Bureau of Indian Affairs, the Idaho Department of Lands, the Idaho Department of Water Resources, Boise Cascade Corporation, and Potlatch Corporation. Nearly all agencies using OQs acquire reproducible masters. Nearly all production of orthophotography is made by digital methods.

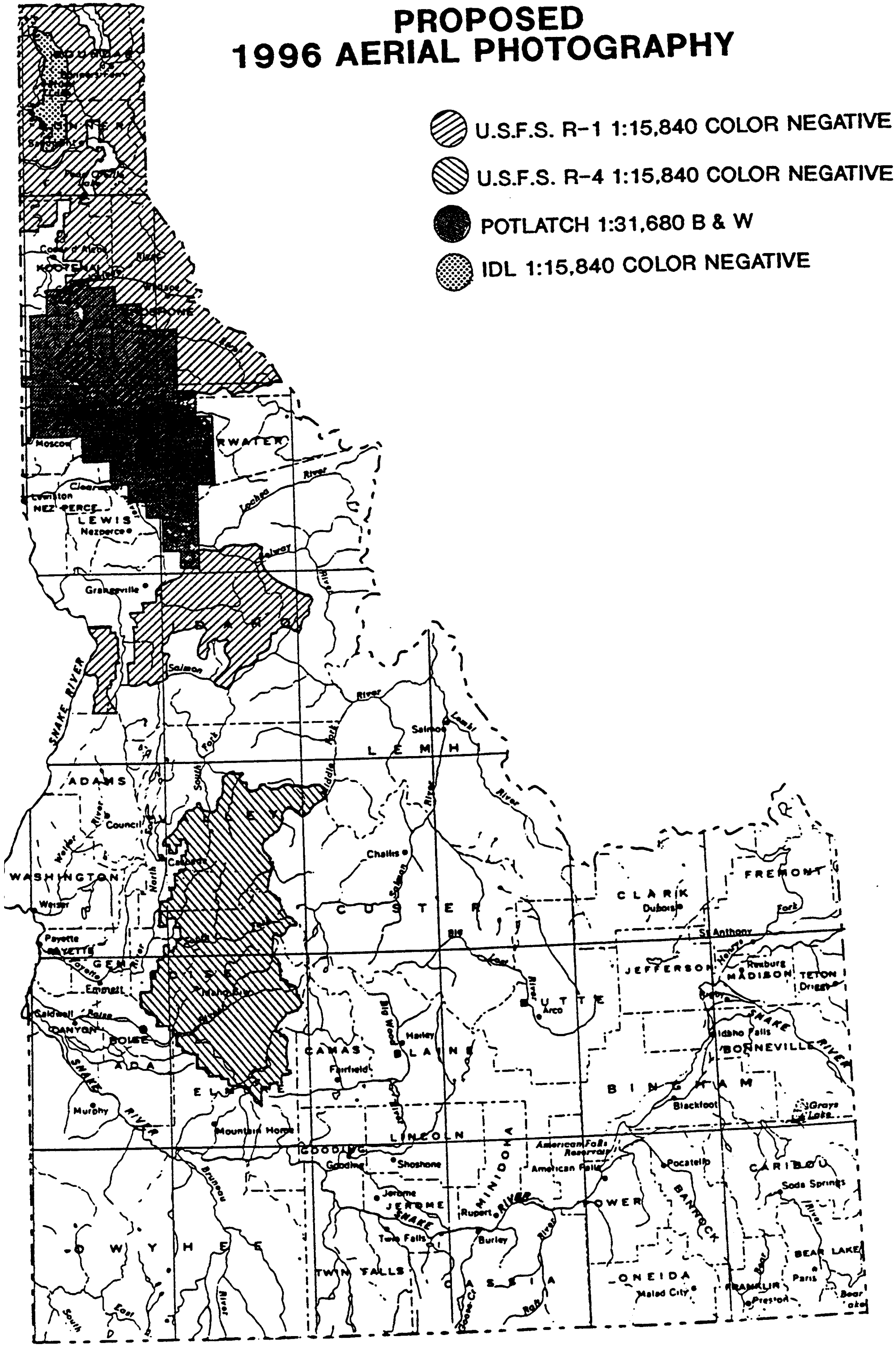
Southwestern Idaho Orthophotoquad Cooperative Project A cooperative project to acquire 112 orhtophotoquads for a portion of southwestern Idaho began in early 1994. Discussions led to a cooperative project between the Idaho Department of Lands, Boise Cascade Corporation, Division of Environmental Quality, and the Bureau of Land Management. The four agencies jointly funded the 1:80,000 photography covering the 112, 7.5-minute quadrangle projects area. Keystone Aerial Surveys of Philadelphia, Pennsylvania was contracted to fly the photography and the Idaho Department of Lands administered the contract.

For the production of the orthophotoquads, the Boise and Payette National Forests were added as cooperators. The orthophotoquad production was accomplished through Region Six of the U.S. Forest Service. Delivery of 112 digital orthophotoquads was made on May 14. The digital OQs were produced at two meter pixel resolution. A hardcopy half-tone negative is also being delivered, from which mylar positives will be made that are suitable for diazo printing.

GCDB Digital Plats The Idaho Department of Lands, U.S. Bureau of Land Management, and the State Tax Commission are cooperating to produce digital plats from GCDB data. As the data is received from the BLM, ARC/INFO coverages are generated and topology built by IDL personnel. The Tax Commission then performs quality control and post-processing to ensure the township platting is correct and sections are attributed correctly. They then assign lot numbers and lot acreages to the attribute table. The Tax Commission will then distribute the plats to the counties, which want to use them for cadastral control. Once the township has been processed, IDL is attributing state owned land with surface and mineral status to the township plat.

1995 AERIAL PHOTOGRAPHY

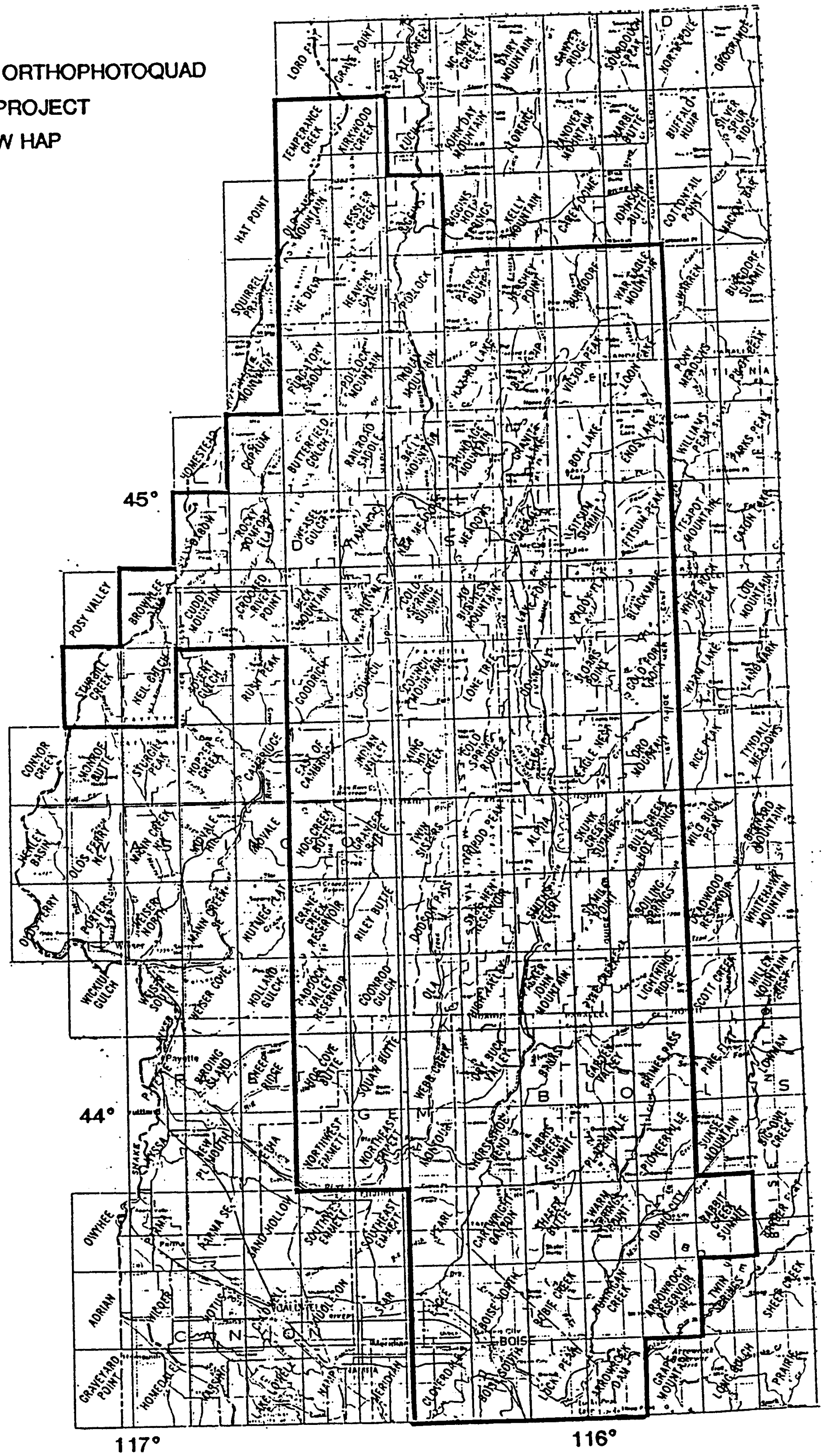


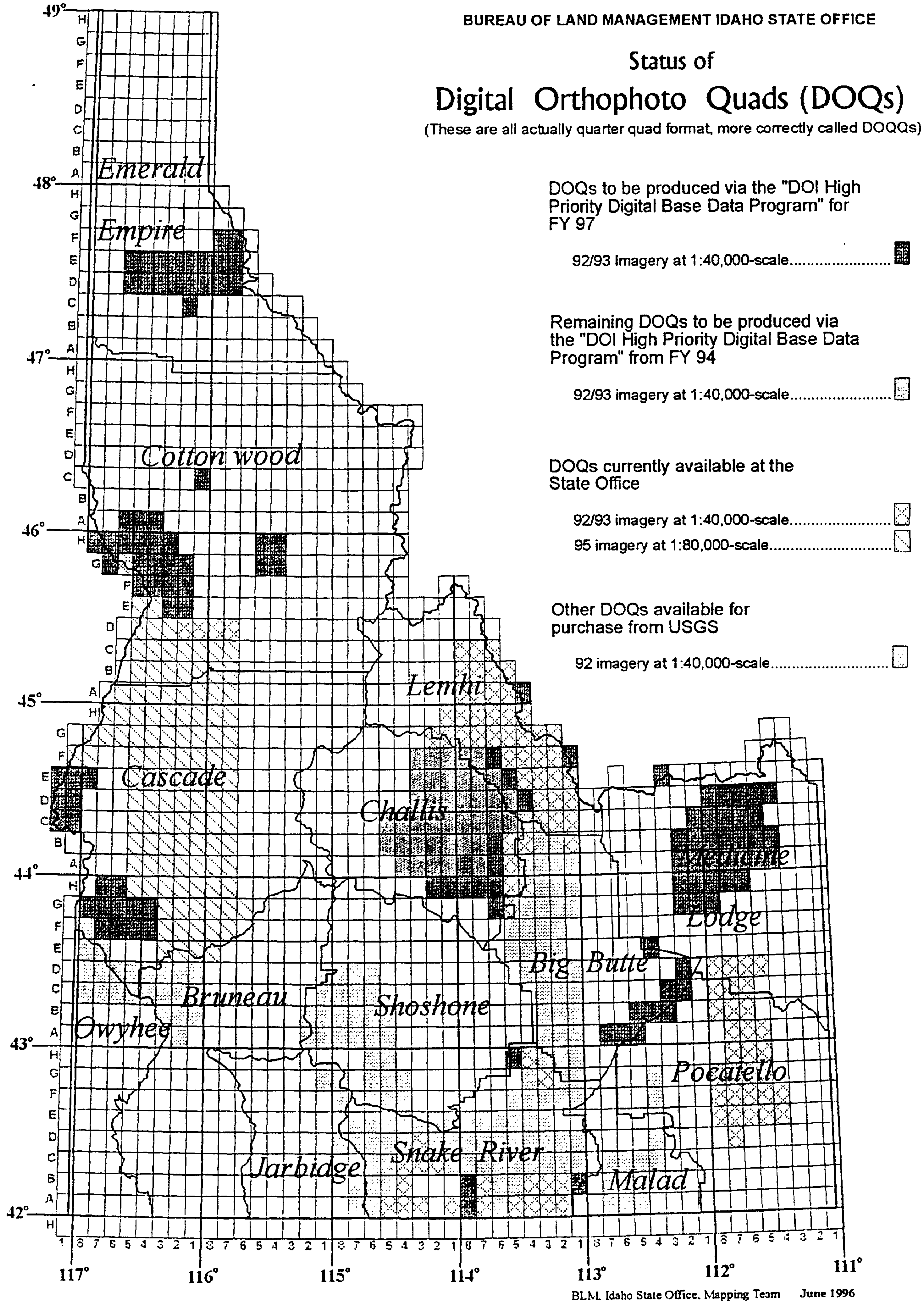

PROPOSED
1996 AERIAL PHOTOGRAPHY
U.S.F.S. R-1 1:15,840 COLOR NEGATIVE
U.S.F.S. R-4 1:15,840 COLOR NEGATIVE
POTLATCH 1:31,680 B & W
IDL 1:15,840 COLOR NEGATIVE
KOOTENAI
Moscow
Lewiston
NEZ PERCE
LEWIS
Nezperce
Grangeville
Salmon
SNAKE RIVER
L E M H I
ADAMS
Council
WASHINGTON
Weiser
Payette
Emmett
Caldwell
CANYON
BOISE
ADA
Murphy
Challis
C U S T E R
CAMAS
Fairfield
Hailey
B L A I N E
Mountain Home
LINCOLN
Shoshone
Gooding
Jerome
Rupert
Twin Falls
TWIN FALLS
Burley
C A S S I A
O W Y H E E
C L A R K
Dubois
FREMONT
St Anthony
JEFFERSON
Rexburg
MADISON
TETON
Driggs
B U T T E
Arco
Idaho Falls
BONNEVILLE
B I N G H A M
Blackfoot
American Falls Reservoir
American Falls
Pocatello
POWER
BANNOCK
CARIBOU
Soda Springs
Grays Lake
ONEIDA
Malad City
FRANKLIN
Preston
BEAR LAKE
Paris

SOUTHWESTERN IDAHO ORTHOPHOTOQUAD

COOPERATIVE PROJECT

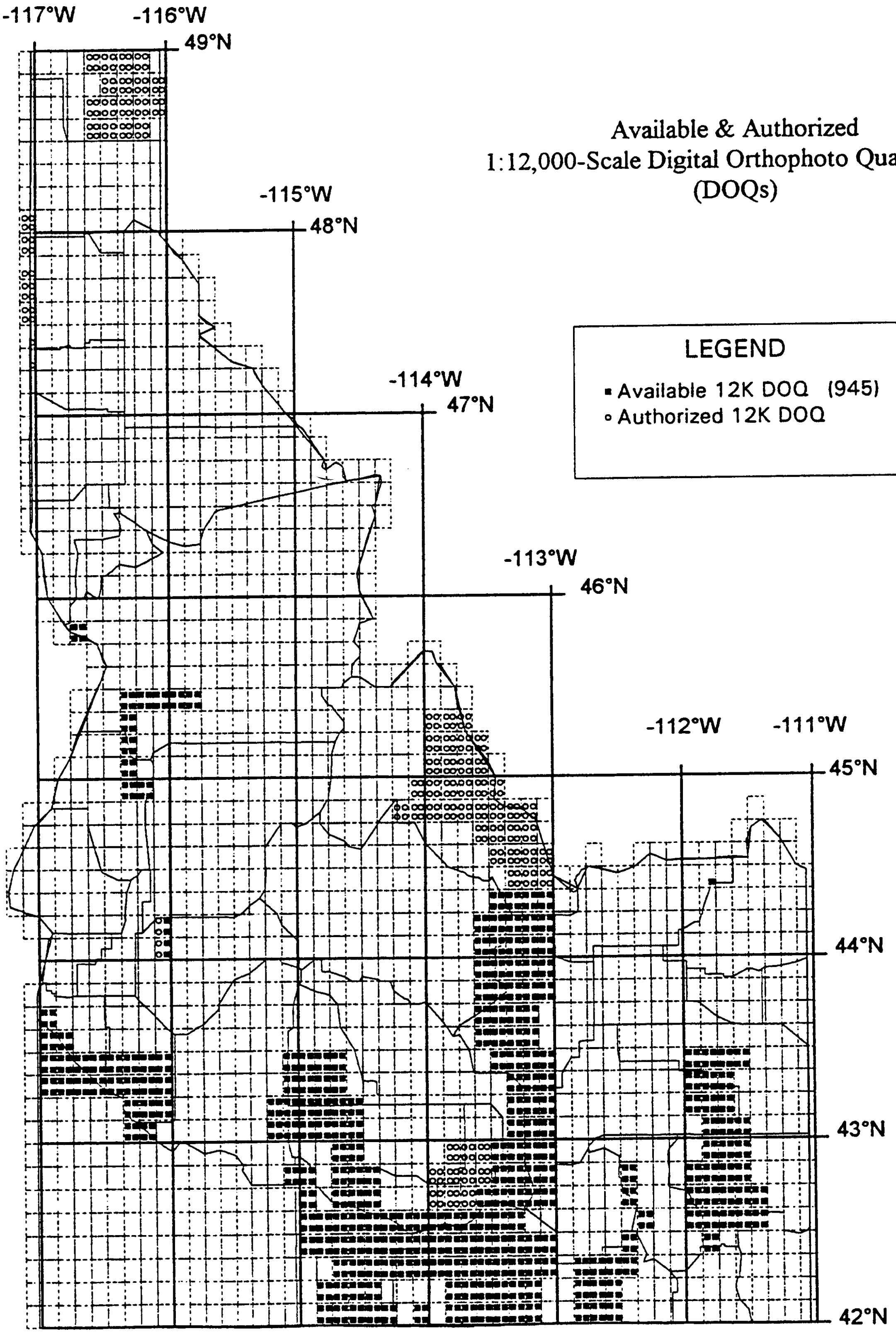
1:80,000 B/W HAP




BUREAU OF LAND MANAGEMENT IDAHO STATE OFFICE
Status of
Digital Orthophoto Quads (DOQs)
(These are all actually quarter quad format, more correctly called DOQQs)
DOQs to be produced via the "DOI High Priority Digital Base Data Program" for FY 97
92/93 Imagery at 1:40,000-scale........................
Remaining DOQs to be produced via the "DOI High Priority Digital Base Data Program" from FY 94
92/93 imagery at 1:40,000-scale........................
DOQs currently available at the State Office
92/93 imagery at 1:40,000-scale........................
95 imagery at 1:80,000-scale...........................
Other DOQs available for purchase from USGS
92 imagery at 1:40,000-scale...........................
Emerald
Empire
Cotton wood
Lemhi
Cascade
Challis
Medicine
Lodge
Big Butte
Bruneau
Shoshone
Owyhee
Pocatello
Jarbidge
Snake River
Malad
49°
48°
47°
46°
45°
44°
43°
42°
117°
116°
115°
114°
113°
112°
111°
BLM Idaho State Office, Mapping Team June 1996

IDAI

Available & Authorized
1:12,000-Scale Digital Orthophoto Quadrangles
(DOQs)



LOCAL GOVERNMENT NEWS

Compiled by Rose Blazicevich, Hall Guttormsen and Joe Bucher
Idaho State Tax Commission, Technical Support Bureau

Legislation on Fees for Digital Data: In 1993 Idaho's Legislature passed Idaho Code 31-875, which gave a county that develops computerized mapping systems the right to collect fees based on the actual costs of development, annual maintenance and dissemination. In 1995, the Legislature extended this concept to Idaho's cities. (Idaho Code 50-345). During 1995 and 1996, however, several other events occurred which will affect these laws. The President of the United States signed Executive Order 97, which says that governments cannot charge for information other than for duplication charges and the media of transfer. Secondly, the federal government Freedom of Information Act says that all information gathered using tax monies must be available to the public for the cost of the media and computer transfer time. Recently, the city of Bellvue, Washington lost a case in federal court concerning the right to collect fees based upon actual costs of development and dissemination.

Taxing Districts: The mapping section of the State Tax Commission continues to develop the Tax Code Area by digitizing taxing district boundaries. They are working closely with other state agencies as well as with counties and cities. There is extensive coordination with the major federal agencies: BLM,USFS, NRCS, USGS AND BOR. The Tax Commission, Technical Support Bureau has a written agreement with the Department of Lands to obtain and check the validity of data as received from the BLM. It is converted to a more usable format by the Department of Lands and the data is verified by both the Department of Lands and the State Tax Commission. The efforts are being focused upon GCDB, CFFs, DLGs and then other, less accurate sources such as 100K. Since the counties in Idaho could use this as control for parcel mapping, the accuracy has to be as good as possible. If the counties have more accurate local survey control, they are encouraged to use their data first.

Both the Basic and Intermediate Mapping courses have been developed and presented throughout the state. The first course was presented in August, 1995. 28 of the 44 counties have been involved in these courses through June, 1996.

Twin Falls, Gooding Lincoln and Jerome Counties are developing a 911 area called the Southern Idaho Regional Communications Center. Al Sandner is coordinating efforts and is working with Intergraph systems. Department of Lands, Department of Transportation and the Tax Commission are assisting in the effort. The Department of Transportation has a Memorandum of Understanding regarding this effort.

Latah County has proceeded to convert paper map coverages to digital CAD format for the eastern portion of the county.

Owyhee County has begun transferring information from mylar to CAD format and is heading rapidly toward a GIS environment. Owyhee County chose to scan their maps since all are drawn to scale from GLO/BLM survey information.

Valley County is also well along in digitizing the parcels in their county. Many of the counties have migrated to COGO software that is capable of exporting files into a DFX or DWG format. Several of the older COGO packages do not allow this to occur, which hinders the effort to progress to computer mapping/GIS.

The Tax Commission is working with Bonner County to take CAD information and transition and link the maps to a relational IBM AS400 database for assessment purposes.

Lincoln County has installed CAD software and is ready to migrate COGO parcels to the vector base.

Lemhi County is closing the gap quickly by going to a Windows COGO system and CAD software. They are going through the typical learning curves associated with changes and new software. Madison County is experiencing the same frustrations as Lemhi.

Many other Idaho counties are well on their way to a computer mapping system.

Many Idaho cities are converting to computer mapping as well. The linking at the city level of planning and zoning with various other departments is making the use of computers crucial.

OTHER GIS NEWS

<u>Idaho Department of Lands 1:24,000 Mapping</u> By Dave Gruenhagen, IDL

The Department of Lands continues to build and enhance its 1:24,000 scale database. This is being accomplished through a hybrid approach by integrating cartographic feature files (CFFs), produced by the U.S. Forest Service, and digital line graphs (DLGs), produced by U.S.G.S., into a common geographic database. The data are separated into the standard USGS data layers: hydrography, roads and trails, PLSS, boundaries, railroads, and miscellaneous transportation. Quads that use CFF data as the source also have manmade features and spot elevation points layers.

Data to build this database was acquired cooperatively through data sharing agreements from the Forest Service, Idaho Transportation Department, and Bureau of Land Management. Cooperative working relationships have greatly assisted the Department to perform quality control for the database. Agencies that are cooperating, or that have provided cooperative help, include the State Tax Commission, Division of Environmental Quality and the Bureau of Reclamation. Their direct cooperative assistance has greatly helped to develop this database statewide.

Metadata is attached to each of the nearly 12,500 coverages. This is done automatically during the conversion process. The metatdata does not explicitly follow the metadata standard because the database development was started before the metadata standard was finalized; however it does contain important information about each coverage.

Roads have been updated in the panhandle area using the 1992 orthophotoquad imagery. In cooperation with the Boise National Forest, Boise Cascade Corporation and the Idaho Department of Lands, roads are also being updated in portions of southwestern Idaho.

USGS Revision Program

By Ingrid Landgraf, USGS-Rocky Mountain Mapping Center

The USGS revision program currently revises less than 400 quadrangles a year, which is less than one percent of the 55,000 7.5-minute topographic quadrangles covering the United States. The majority of this revision work is cooperatively funded or is connected to the Census 2000. While the revision program is not entirely cooperatively driven, cooperator funding is the only way to ensure that selected quadrangles will be revised.

The last revision work done in Idaho was completed in 1993. No revision was done by the USGS in 1994 and 1995, while Idaho continues to have a lengthy list of revision requirements. USGS now has a fixed price for revision, allowing for cost sharing arrangements to be established. The total cost for a 7.5-minute limited update revision is $10,000 per quadrangle for the digits and $4,800 for the product generation (paper maps). The cooperator share is 50 percent, or
$5,000 for digits and $2,400 for product generation. If there are several cooperators, the cost is divided equally among the USGS and the cooperators.

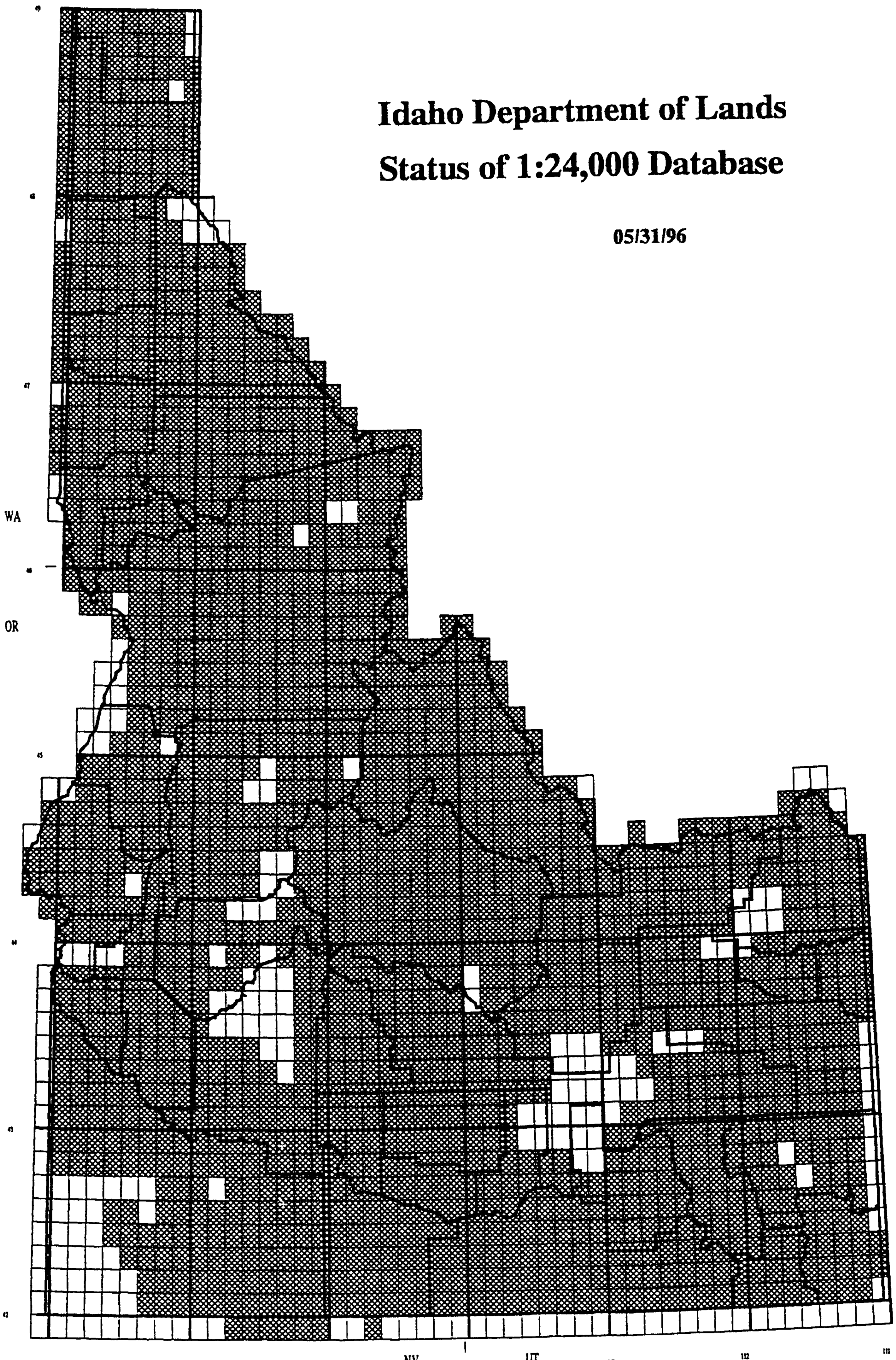
USGS also offers digital revision for a single overlay or theme. The cost for the 7.5-minute digital limited update by overlay is:

PLSS	$500 total	$250 cooperator share
Boundary	$450 total	$225 cooperator share
Hydrography	$1,450 total	$725 cooperator share
Transportation	$1,750 total	$875 cooperator share

Again, if there are several cooperators, the cost is divided equally among the USGS and the cooperators.

Another option of revision that could be explored is incorporating local updated data into the process. This might lead to a work share or data exchange arrangement.

Now that Idaho has determined which quadrangles need revising, the next step is to determine who is interested in, and able to contribute toward, having those quadrangles revised. Those quadrangles with several interested agencies could be revised at a minimal cost to everyone. The Idaho geographic community is organized enough to make this happen.

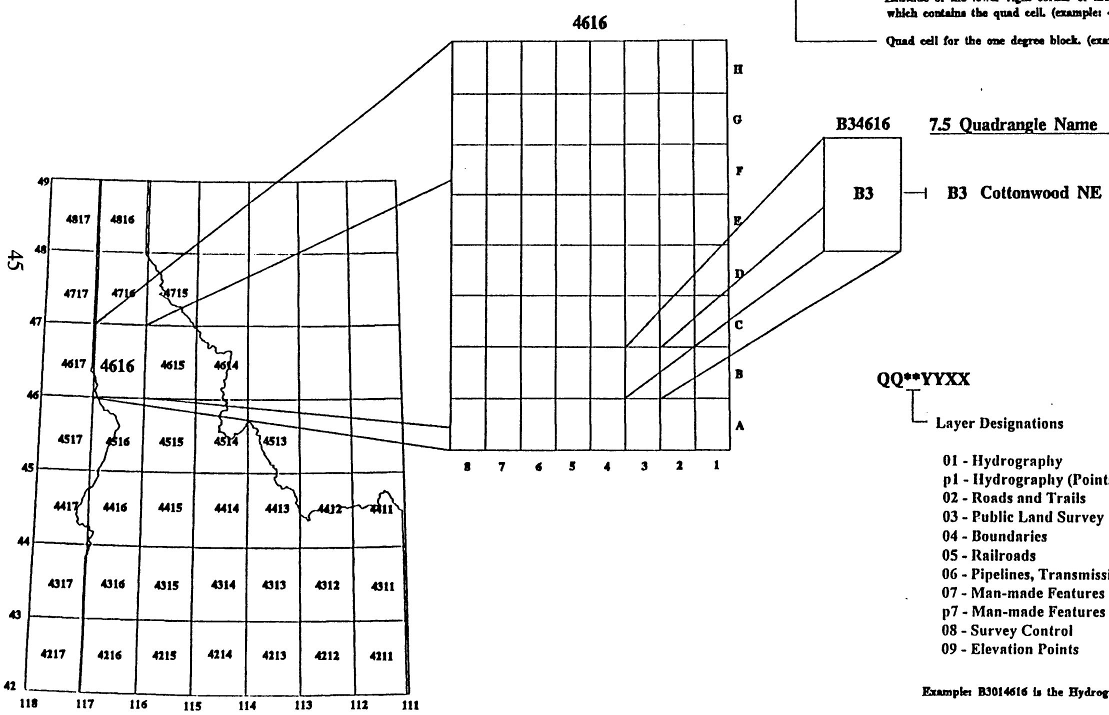

Idaho Department of Lands
Status of 1:24,000 Database
05/31/96
WA
OR
NV
UT

Idaho Department of Lands

7.5 Minute Quad Indexing System

QQYYXX

- Longitude of the lower right corner of the one degree block which contains the quad cell. (example: 116 degrees West = 16)
- Latitude of the lower right corner of the one degree block which contains the quad cell. (example: 46)
- Quad cell for the one degree block. (example: B3)



QQ**YYXX

Layer Designations

01 - Hydrography
p1 - Hydrography (Points)
02 - Roads and Trails
03 - Public Land Survey
04 - Boundaries
05 - Railroads
06 - Pipelines, Transmission Lines, Misc. Transpiration
07 - Man-made Features (Lines)
p7 - Man-made Features (Points)
08 - Survey Control
09 - Elevation Points

Example: B3014616 is the Hydrography Layer for B34616

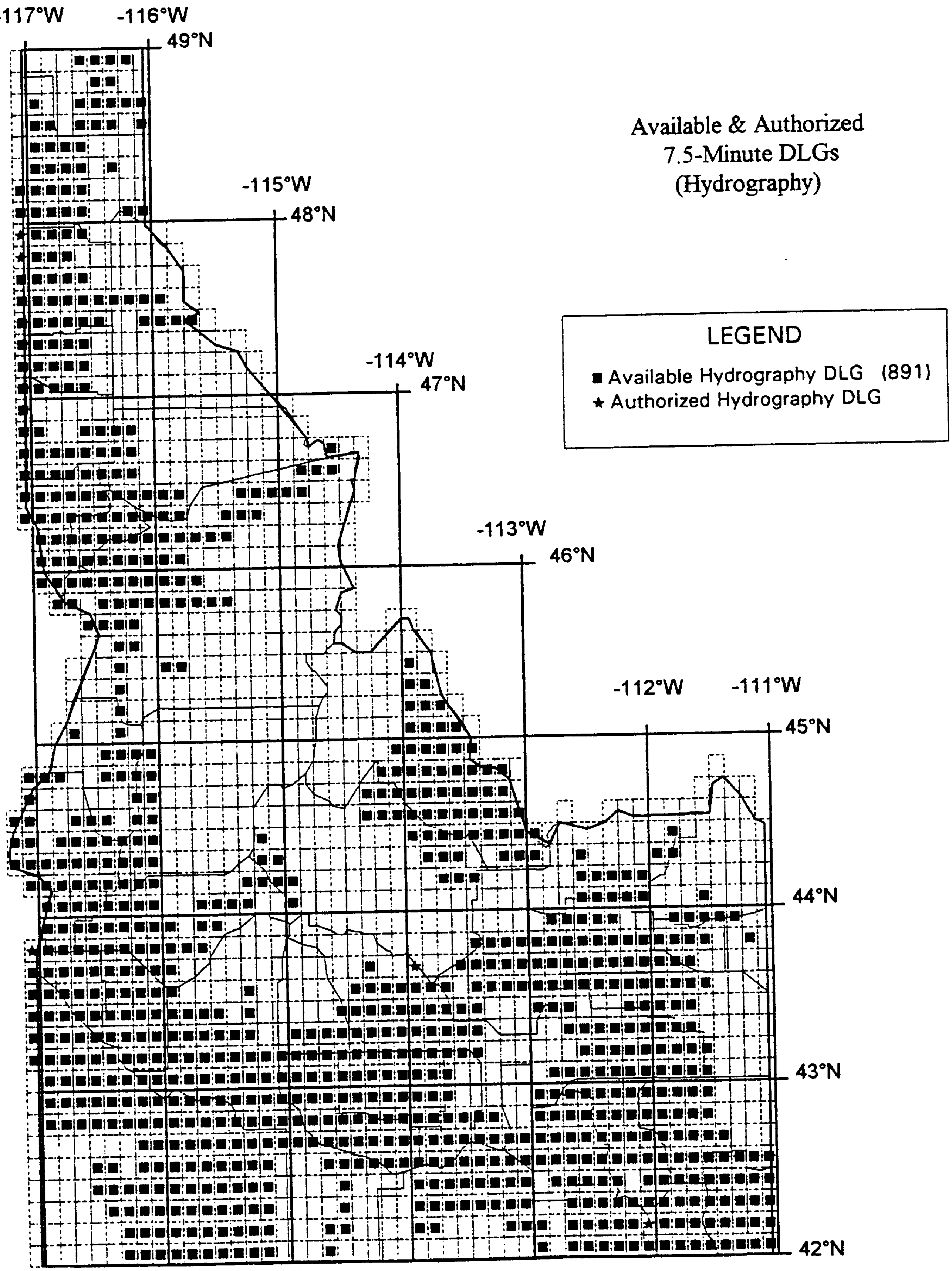
USGS SUMMARY OF IDAHO MAPPING PROGRAM

Work in Process as of 5/9/96

Revision	0 quadrangles
Digital Orthophoto Quadrangles	69 quadrangles
Digital Elevation Models	16 quadrangles
1:24,000-Scale Hydrography DLG	4 quadrangles
1:24,000-Scale Transportation DLG	4 quadrangles
1:24,000-Scale Boundary DLG	0 quadrangles
1:24,000-Scale PLSS DLG	0 quadrangles
1:24,000-Scale Hypsography DLG	0 quadrangles
1:24,000-Scale Manmade Features DLG	0 quadrangles
1:24,000-Scale Survey Control and Markers DLG	0 quadrangles
1:24,000-Scale Vegetation	0 quadrangles
1:24,000-Scale Non-vegetative Features DLG	0 quadrangles
1:100,000-Scale Hydrography DLG	68 quadrangles
1:100,000-Scale Transportation DLG	68 quadrangles
1:100,000-Scale Boundary DLG	2 quadrangles
1:100,000-Scale PLSS DLG	0 quadrangles
1:100,000-Scale Hypsography DLG	13 quadrangles
1:100,000-Scale Topographic Maps (Graphic)	0 quadrangles

Maps and Data Available as of 5/9/96

7.5 Minute Topographic Maps (1,693 maps)	100% of State
State Base Maps - 1:500,000-scale	1 sheet
High Altitude Quad-Centered Photography	100% of State
Land use/Land Cover Maps (27 quadrangles)	100% of State
Orthophoto Quadrangles Complete	100% of State
1:100,000-Scale Planimetric	68 quadrangles
1:100,000-Scale Topographic	65 quadrangles
Digital Orthophoto quadrangles	236 quadrangles
1:24,000-Scale DEM (7- and 15-meter standards)	1615 quadrangles
1:24,000-Scale Hydrography DLG	891 quadrangles
1:24,000-Scale Transportation DLG	933 quadrangles
1:24,000-Scale Boundary DLG	1224 quadrangles
1:24,000-Scale PLSS DLG	1226 quadrangles
1:24,000-Scale Hypsography DLG	72 quadrangles
1:24,000-Scale Manmade Features DLG	22 quadrangles
1:24,000-Scale Survey Control and Markers DLG	3 quadrangles
1:24,000-Scale Vegetation	3 quadrangles
1:24,000-Scale Non-vegetative Features DLG	3 quadrangles
1:100,000-Scale Hydrography DLG	68 quadrangles
1:100,000-Scale Transportation DLG	68 quadrangles
1:100,000-Scale Boundary DLG	66 quadrangles
1:100,000-Scale PLSS DLG	67 quadrangles
1:100,000-Scale Hypsography DLG	33 quadrangles
1:100,000-Scale County Planimetric Maps	7 maps
1:250,000-Scale LU/LC (vector and Grid Cell data sets) (not printed, film reproducible copy available)	20 maps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47°N
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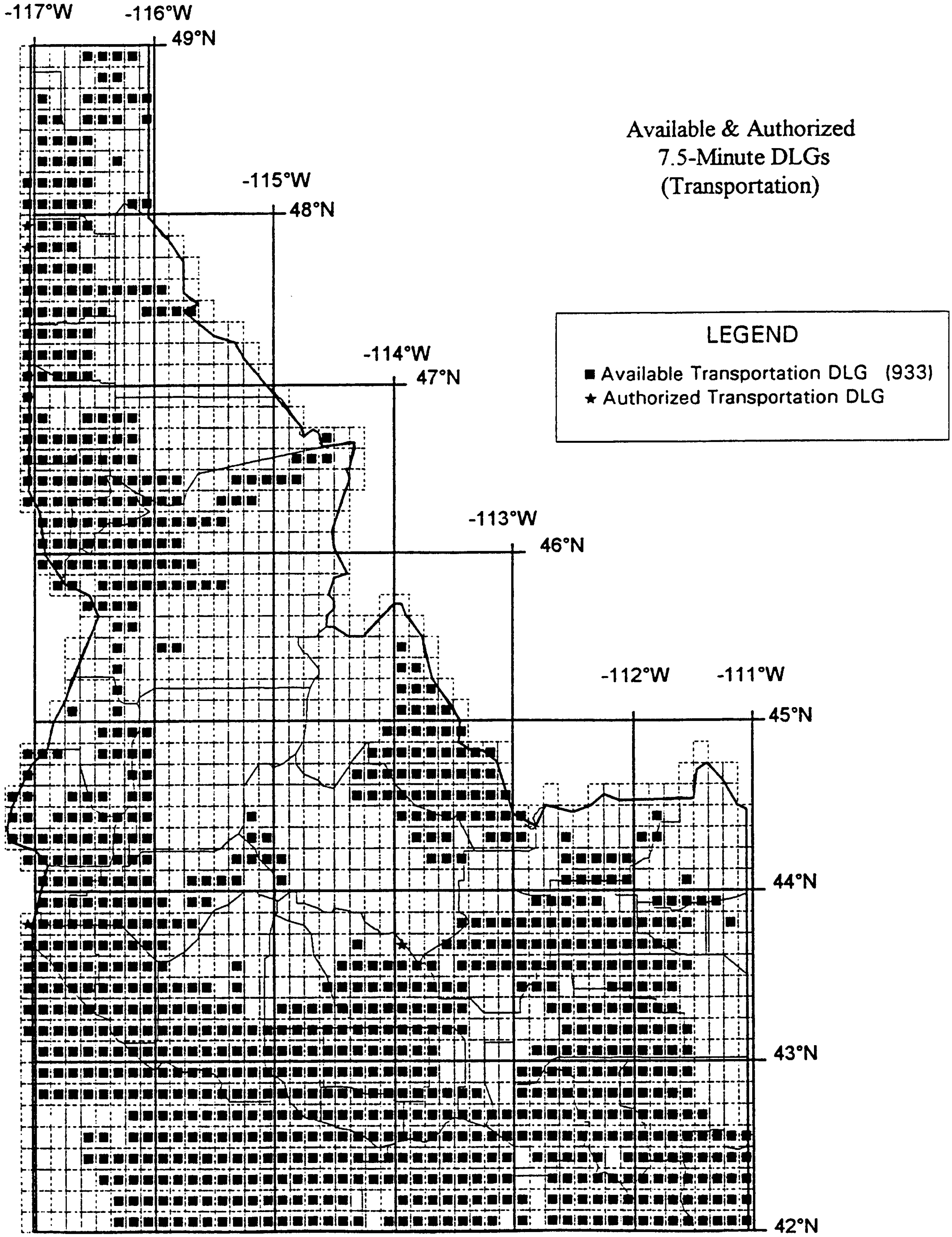
46°N
-112°W
-111°W
45°N
44°N
43°N
42°N
Available & Authorized
7.5-Minute DLGs
(Hydrography)
LEGEND
■ Available Hydrography DLG (891)
★ Authorized Hydrography DLG



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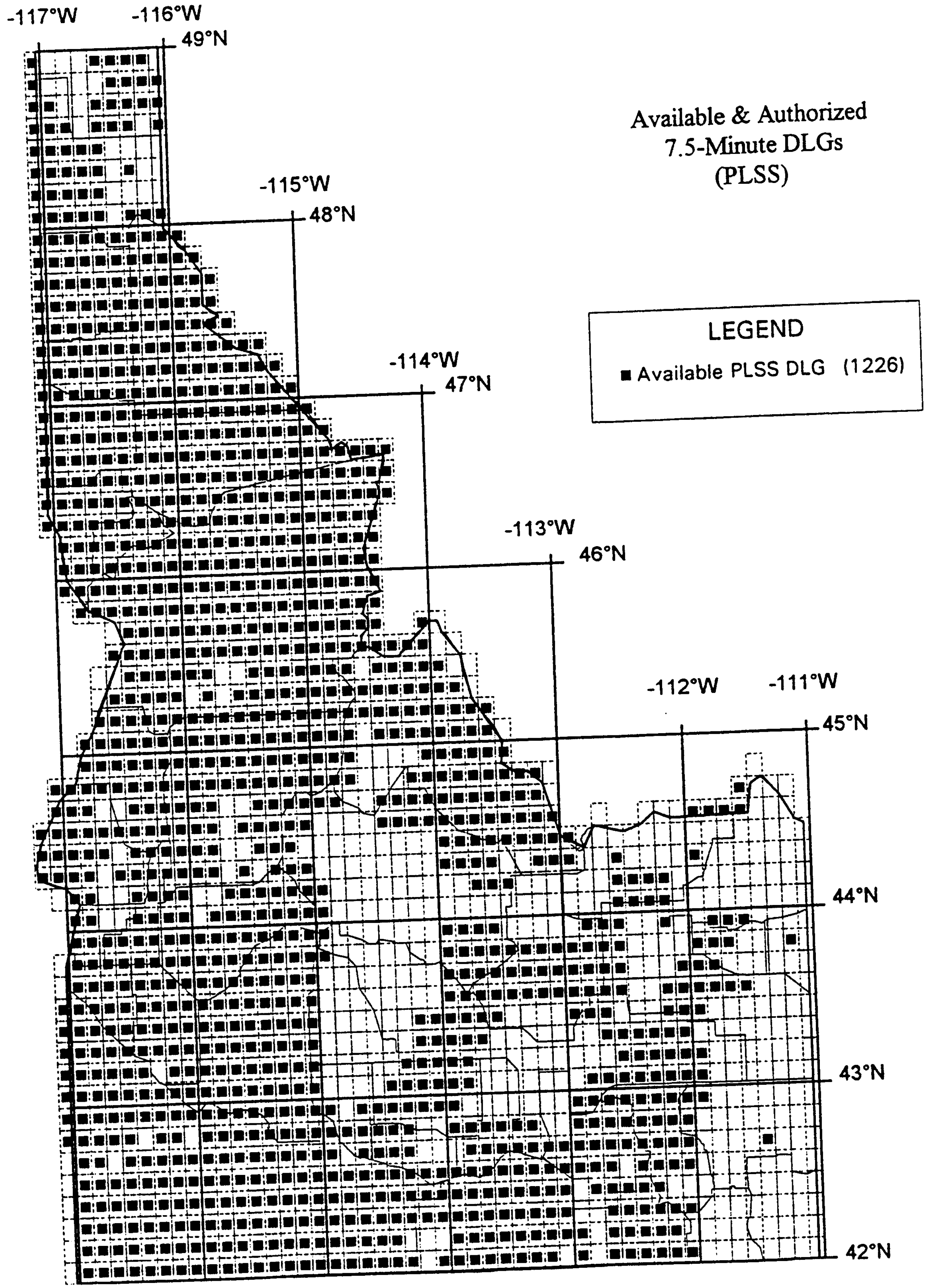
43°N
42°N
Available & Authorized
7.5-Minute DLGs
(Transportation)
LEGEND
■ Available Transportation DLG (933)
★ Authorized Transportation DLG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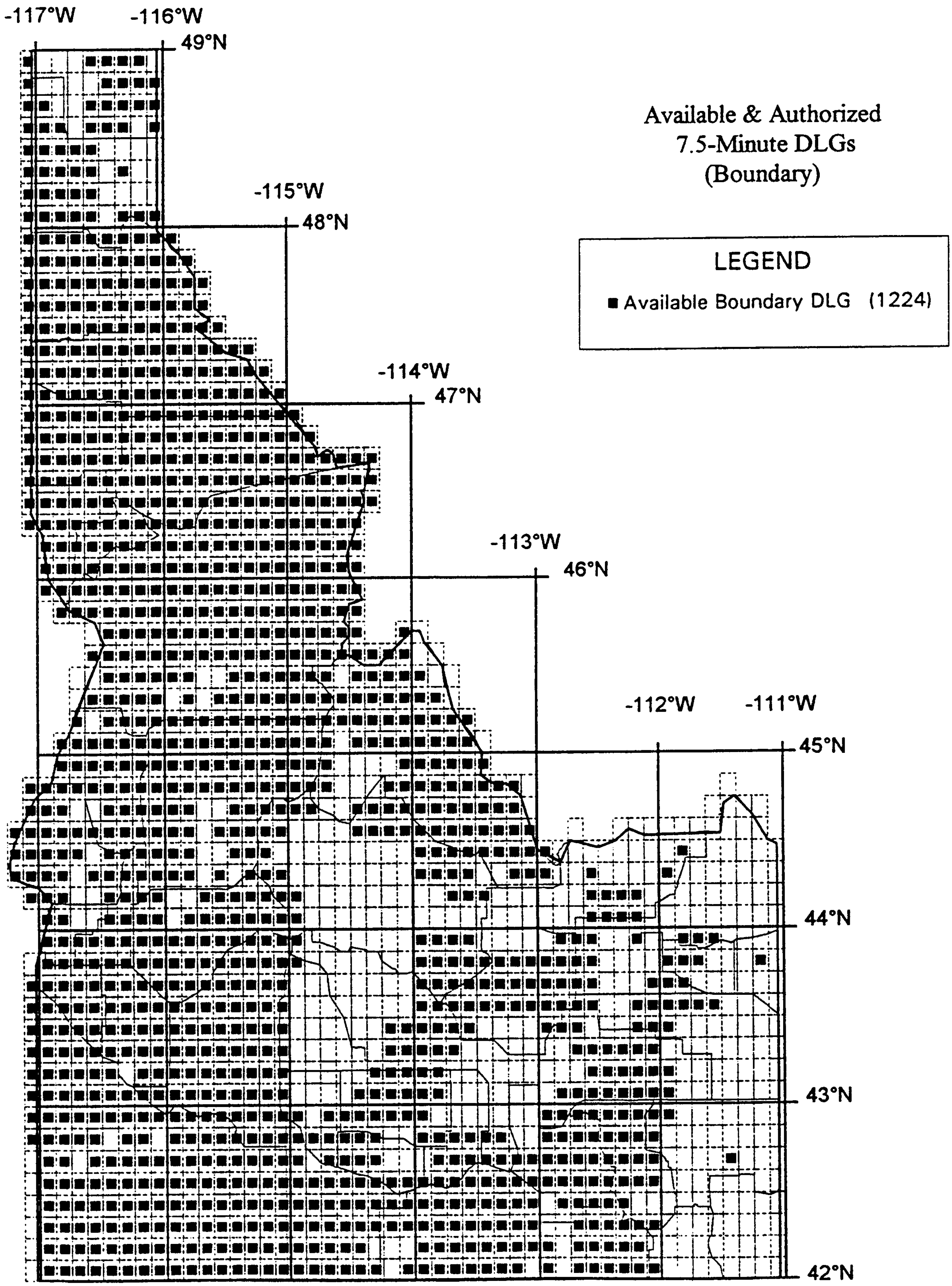
43°N
42°N
Available & Authorized
7.5-Minute DLGs
(PLSS)
LEGEND
■ Available PLSS DLG (1226)



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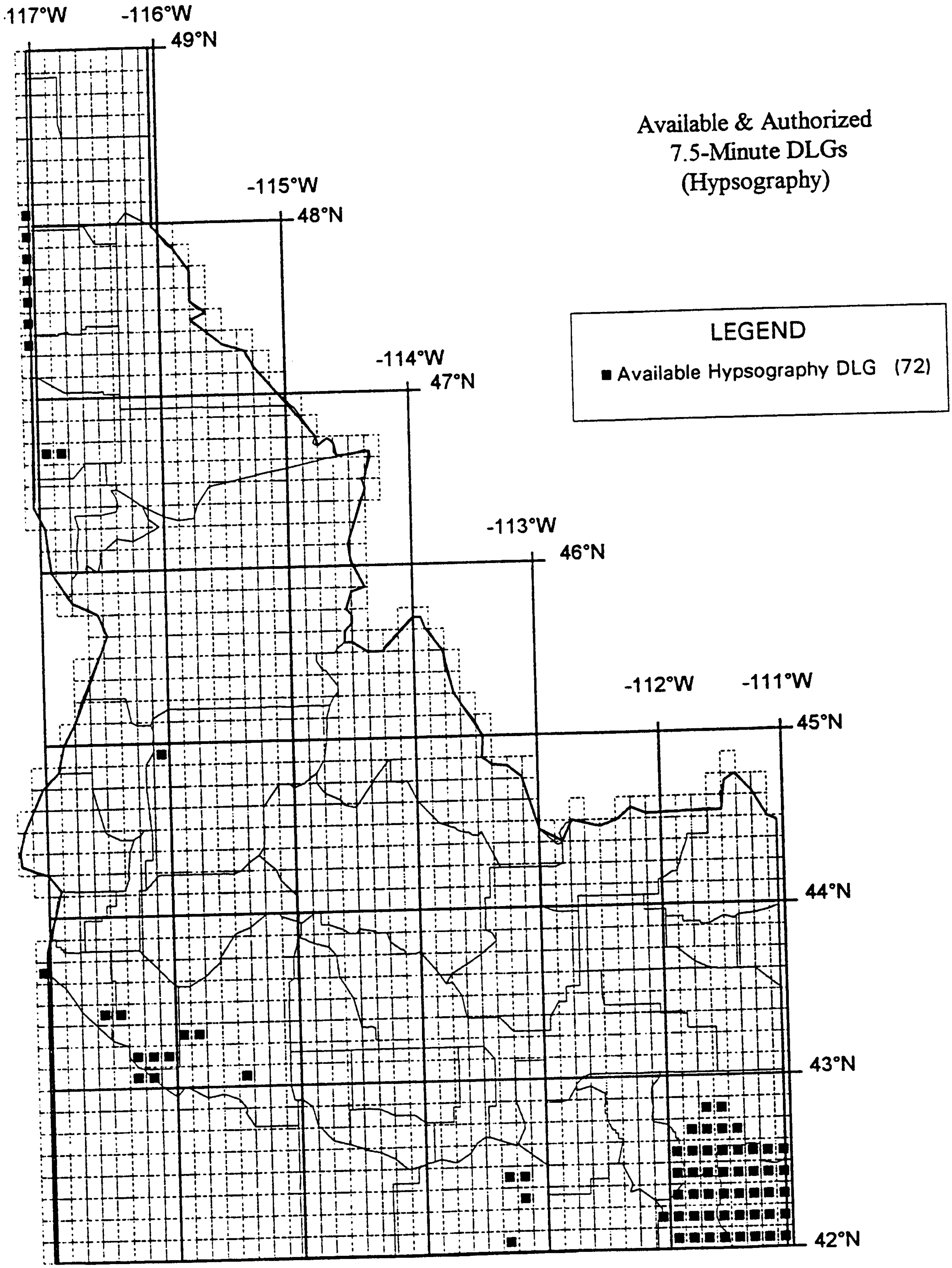
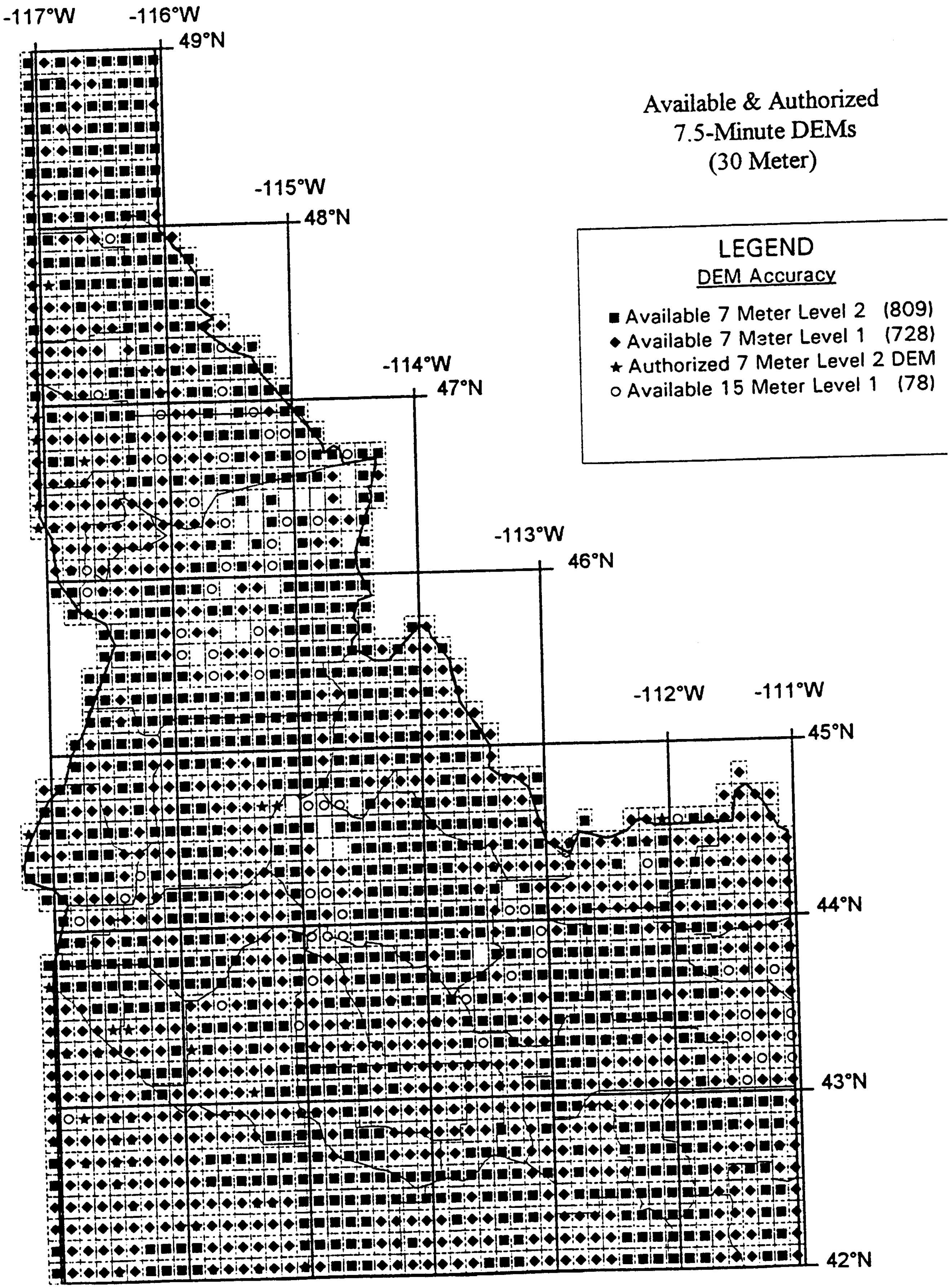
43°N
42°N
Available & Authorized
7.5-Minute DLGs
(Boundary)
LEGEND
■ Available Boundary DLG (1224)

Available & Authorized
7.5-Minute DLGs
(Hypsography)





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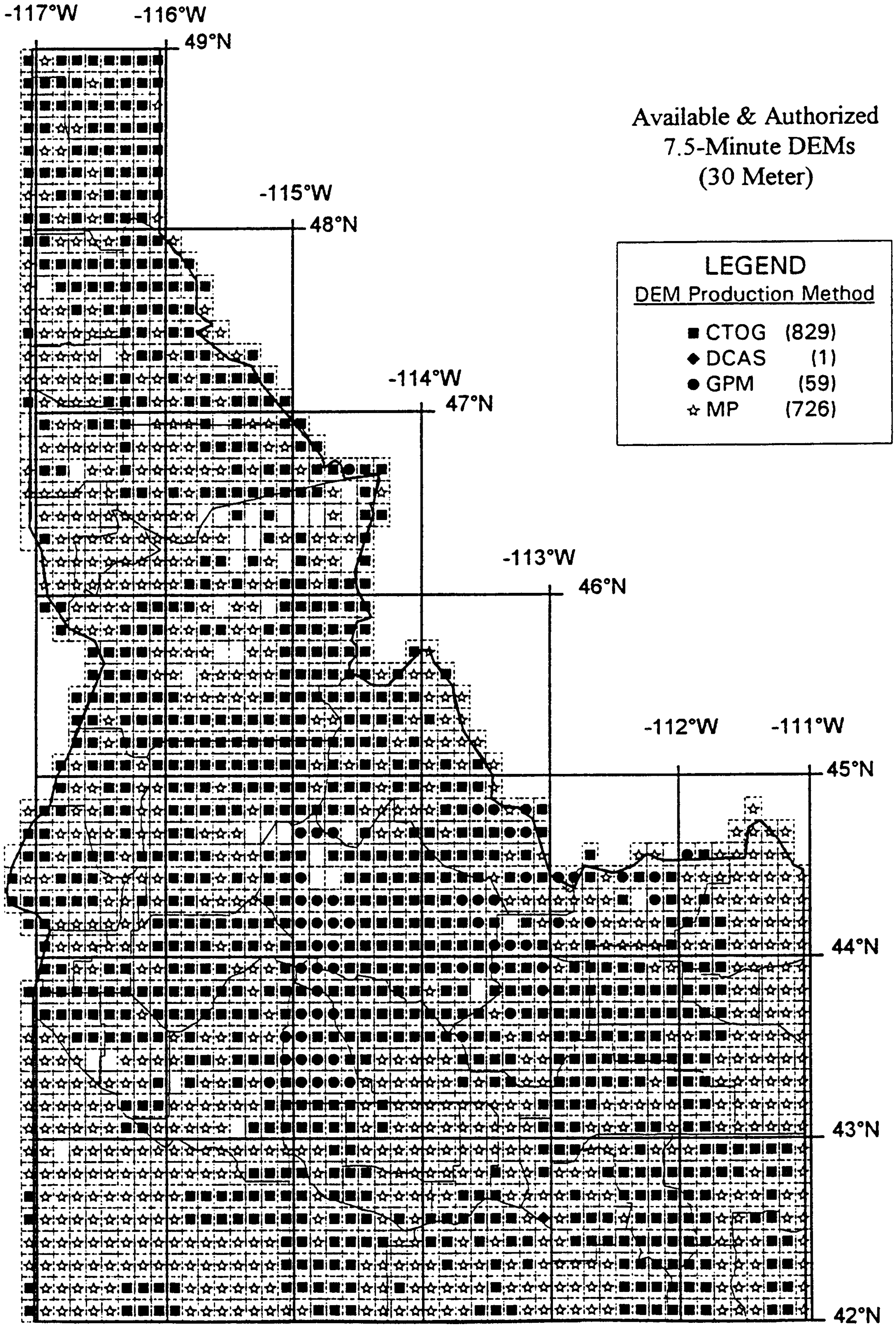
-111°W
45°N
44°N
43°N
42°N
Available & Authorized
7.5-Minute DEMs
(30 Meter)
LEGEND
DEM Accuracy
■ Available 7 Meter Level 2 (809)
◆ Available 7 Meter Level 1 (728)
★ Authorized 7 Meter Level 2 DEM
○ Available 15 Meter Level 1 (78)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42°N
Available & Authorized
7.5-Minute DEMs
(30 Meter)
LEGEND
DEM Production Method
■ CTOG (829)
◆ DCAS (1)
● GPM (59)
☆ MP (726)

USDA Forest Service

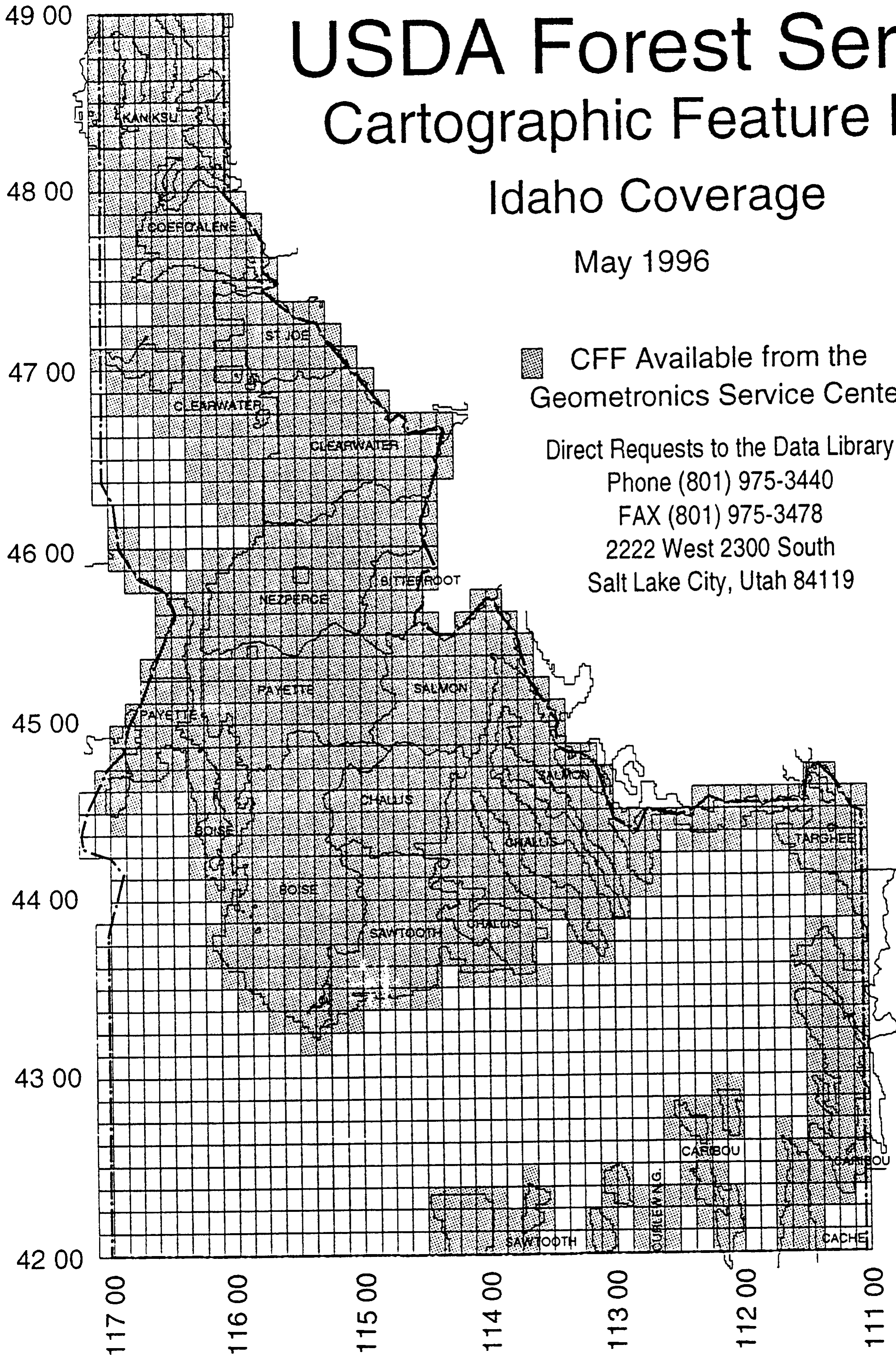
Cartographic Feature Files

Idaho Coverage

May 1996

CFF Available from the Geometronics Service Center

Direct Requests to the Data Library
Phone (801) 975-3440
FAX (801) 975-3478
2222 West 2300 South
Salt Lake City, Utah 84119



Idaho State Tax Commission, Technical Support Bureau

The Technical Support Bureau is on-line with a UNIX based HP workstation. The system was activated in June, 1995 and is currently running ARC/INFO Version 7.04. The mapping section is using both 100K and 24K control as its backdrop from DLG, CFF, GCDB and PLSS. At the 24K scale, the counties could piggy-back on this control information as they come on-line with their computer mapping systems. The 100K control would not be precise enough for individual parcel mapping and tracking. Presently, three county assessors are using full GIS systems for their mapping and database efforts. The remainder of the county assessors are steadily moving toward improving their mapping programs. Many counties are slowly transitioning from manual mapping systems to computer assisted or fully computerized systems for tracking parcels. Numerous counties are making steps to change software packages, which will enable them to move their data from one platform to another--all geared toward GIS.

The Tax Commission is currently working with tax code area boundary data and is processing the data to add tax code areas. Several counties are complete and have been separated into individual taxing districts.

In an attempt to correct boundary discrepancies statewide, we are reviewing taxing district boundaries based on documentation on file. The result of following the documentation will be a tax code area map that matches documented evidence.

The State Tax Commission is also providing mapping assistance to help counties transition from manually drafted and checked maps to computer COGO, CAD and GIS produced maps. With the many existing tasks required of the county parcel mapping community, the change from a manual system to a computer system takes years.

A basic mapping course that introduces federal and state survey requirements, laws and mapping tools to assist the county assessors is available and has been presented to counties throughout the state. This was initially presented in August and six additional times.

The intermediate mapping course has also been developed. This course covers the same topics in much greater depth and includes some additional topics. The intermediate course was initially presented in January 1996.

Future objectives:

Continue to research and develop an open ended interactive multi-platform design for the Idaho Tax Code Area database.

Continue to upgrade and incorporate newer control data, as obtained, into our control data sets.

Develop a long-lasting agreement with other state, federal and local agencies for data exchange formats and idea-sharing.

Bureau of Land Management Geographic Coordinate Data Base Project

Many changes have occurred in the GCDB project since our last report to IGIAC. Most of you are aware that the federal government is downsizing and cutting costs in every conceivable area. During the first seven months of FY 1996, we have had two furloughs and 12 continuing resolutions. The following will outline some of the changes we have experienced this past year in BLM and the GCDB project.

Contract Termination August 1, 1995, BLM terminated its national GCDB data collection contract with Infotech Development Incorporated (IDI) in response to drastic funding cuts proposed for fiscal year 1996. All contracted GCDB data collection ceased and collection shifted to BLM in-house staff. This virtually cut the rate of data collection in half for BLM's GCDB effort. It immediately became obvious that we would no longer be able to meet scheduled completion of "initial data collection" by the end of FY 96 as originally planned. Initial data collection was defined as all category 1-4 townships, which are the least complex and fastest to compute. The idea was to get the fastest, most complete spatial coverage of Idaho for the funds expended. Most contract collection and inspection work was occurring in northern Idaho between Valley and Boundary Counties. Inspection/acceptance of these contractor-collected townships continued.

Shift in Collection Priorities Since that time, we completed a priority scoping exercise with Idaho BLM Field Offices and shifted our collection effort to the uncollected townships our managers determined were most critical to their mission. Work was shifted from lower priority and lower complexity townships to higher priority and higher complexity townships, mainly in the southern half of the state. We are presently filling in some of the "holes" of the previous coverage in that area.

County Region Plan We reorganized our database of townships into "regions" based on Idaho's county political subdivision. We are no longer managing the completion of our workload by "tasks", which was a term associated with managing the work of the contract. Currently, we have 41 regions out of 44 counties, having combined several smaller counties into one region. This county region plan will benefit not only the BLM but state and county governments, which will be important customers and partners with us as we continue to support the future development of GIS in Idaho.

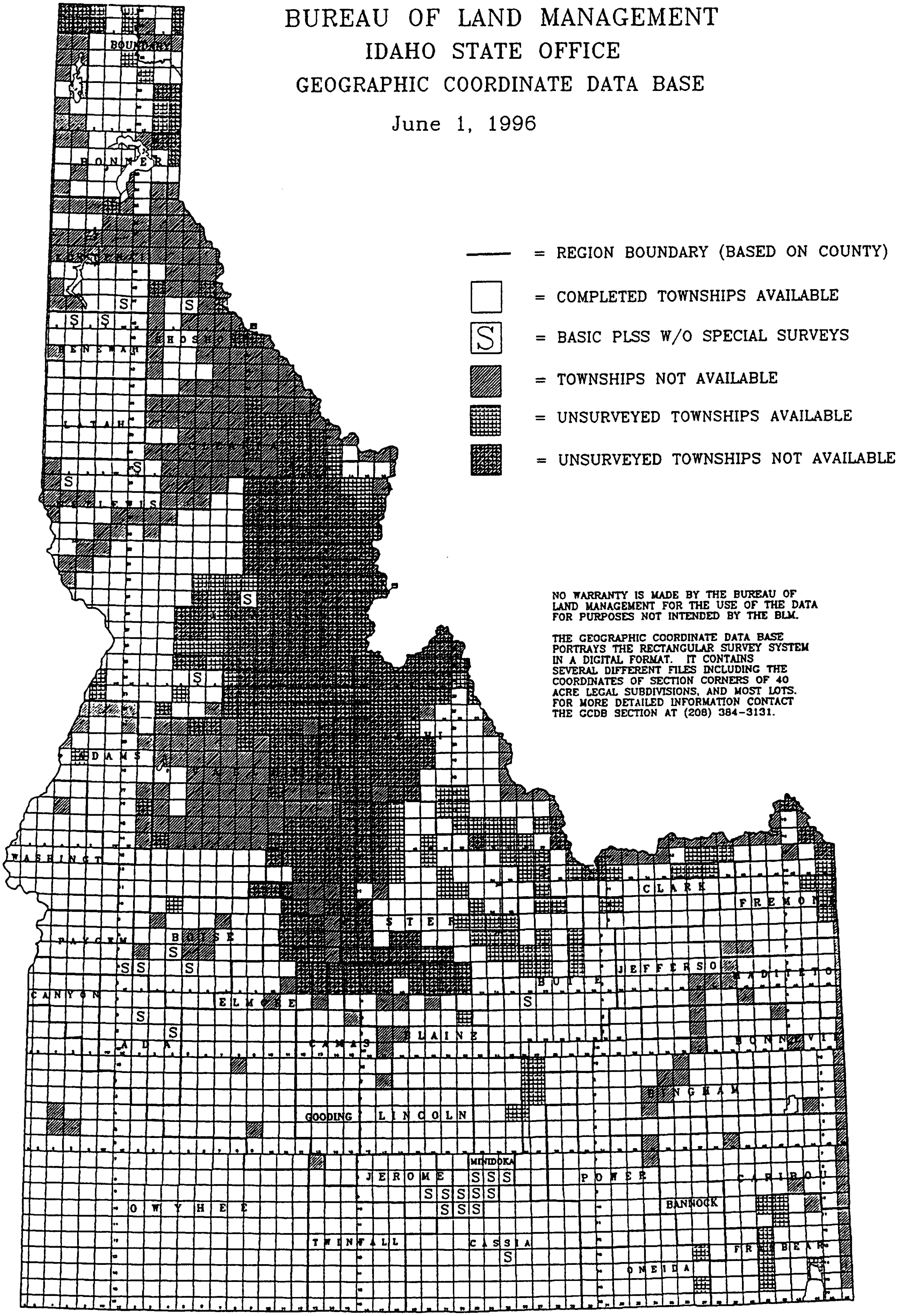
Region Background The regional system of managing the GCDB is an improved method derived from the adoption of the GMM software package and its least squares analysis capability in creating the GCDB. In the infancy of the GCDB collection plan, it was thought that the township boundary should be the region which defined the limits of data analysis and adjustment. In this plan, township boundaries were fixed and transferred to the next township, and so on, as the GCDB was built across the state with the use of PCCS software. What we have since discovered is that systematic error buildup occurs as a result of this process and propagates to larger and larger amounts as township boundary errors forced errors into good interior record measurements and control coordinates where none previously existed. In a like manner, the sphere of influence of higher accurate surveys and control could not extend beyond a township boundary due to the data structure of the GCDB with fixed township boundaries. Under the new region concept, data analysis and subsequent adjustment occurs across a much larger area, limited only by the township complexity and hardware/software capacities. Currently, we are experiencing successful regions from 20 to 40 townships in size and we believe that we can adjust up to the size of about 80 townships or more, if they contain the straight aliquot part structure. There is a correlation between the complexity of the townships comprising a region, i.e., more data due to stream meanders, mineral surveys, townsite surveys, etc., and the size of that region.

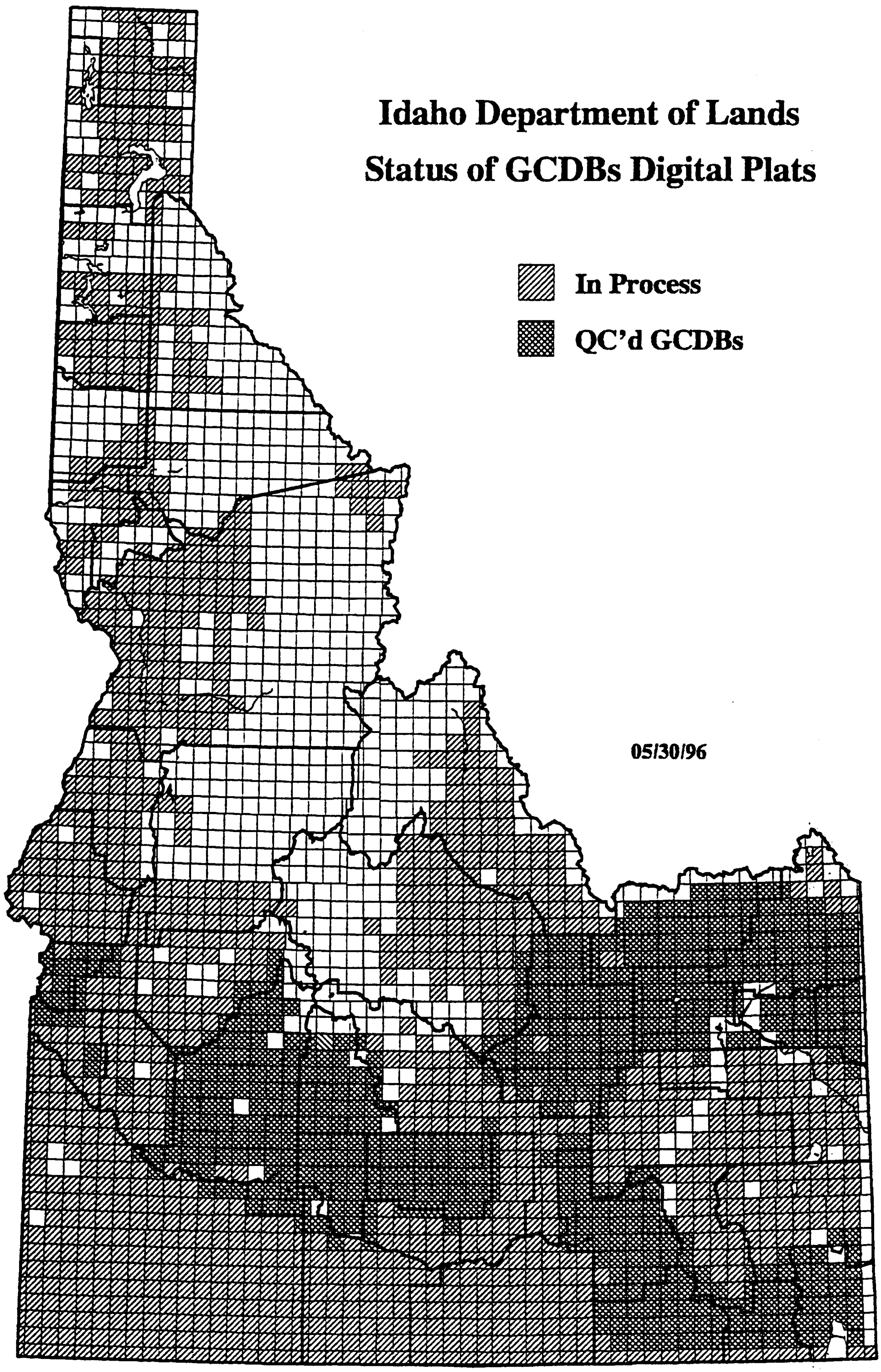
As time and opportunity permit, we are stripping out fixed township boundaries and converting PCCS townships to GMM within regional boundaries. Future concepts in the "operations and maintenance" phase envision updating regions by converting PCCS townships to GMM and updating older survey and control data with newer, more current data from federal, state, county and private sources. Exact edge matching is still required between regional boundaries to maintain the seamless portrayal of the PLSS.

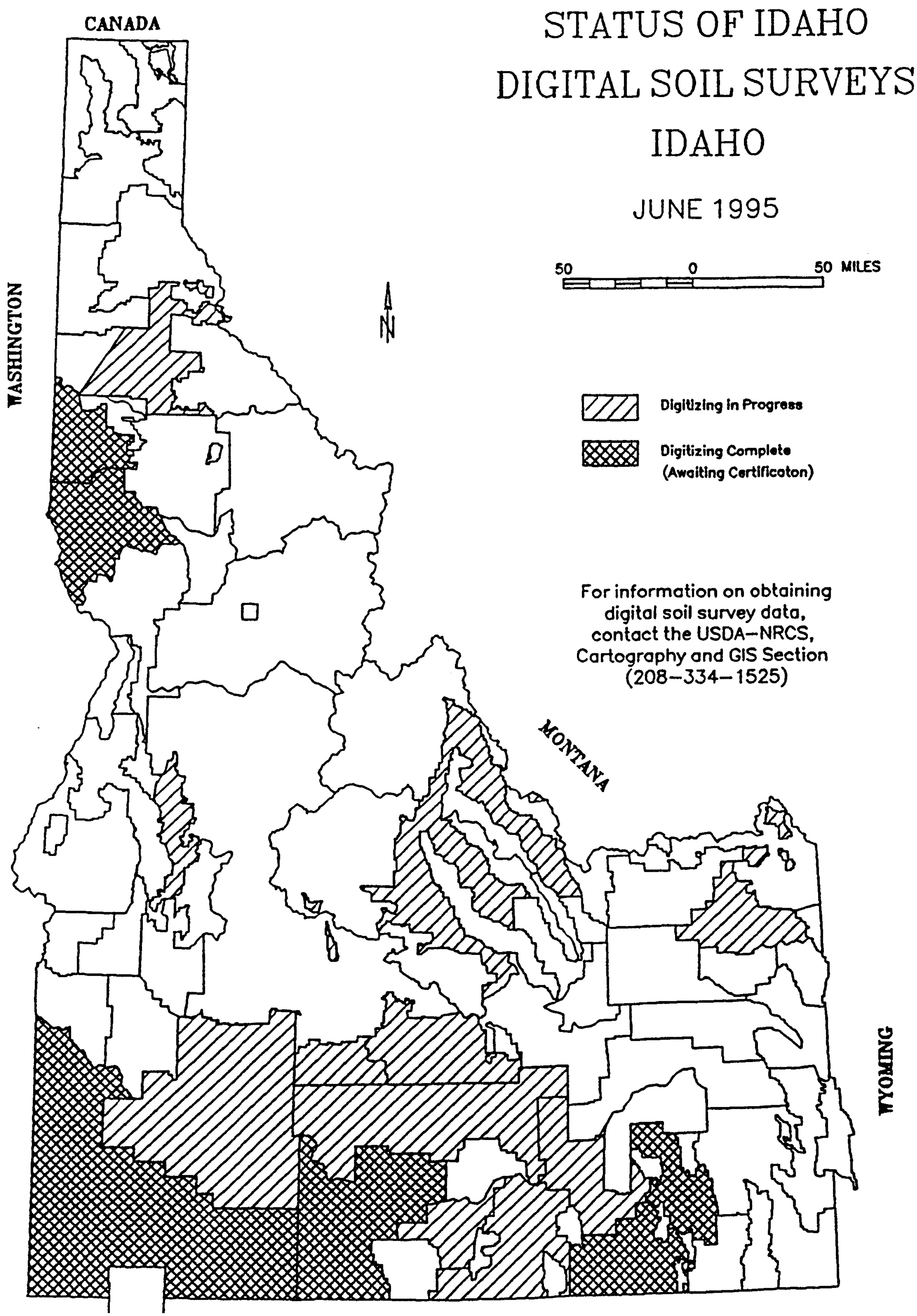
GCDB Map An updated GCDB map of Idaho is provided following this update report. We have removed the Task numbers since we are no longer managing the townships in this manner. At the present time, our goal is to manage these townships to completion based on continually changing priorities. We plan to update this map on a monthly basis as we complete the remaining townships.

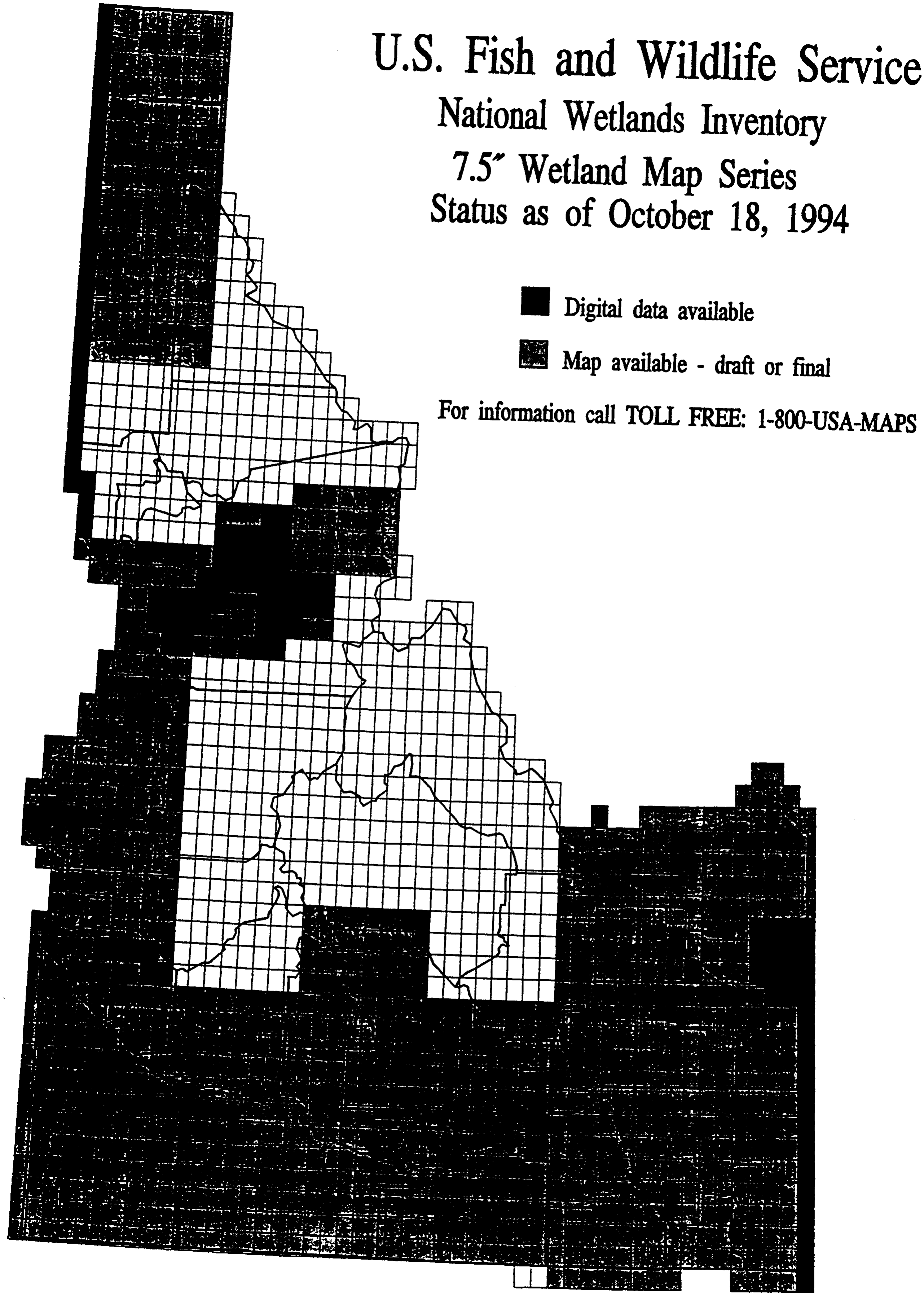
BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE
GEOGRAPHIC COORDINATE DATA BASE

June 1, 1996




Idaho Department of Lands
Status of GCDBs Digital Plats
In Process
QC'd GCDBs
05/30/96


STATUS OF IDAHO
DIGITAL SOIL SURVEYS
IDAHO
JUNE 1995
50 0 50 MILES
N
CANADA
WASHINGTON
MONTANA
WYOMING
Digitizing in Progress
Digitizing Complete
(Awaiting Certificaton)
For information on obtaining
digital soil survey data,
contact the USDA–NRCS,
Cartography and GIS Section
(208–334–1525)


U.S. Fish and Wildlife Service
National Wetlands Inventory
7.5″ Wetland Map Series
Status as of October 18, 1994
Digital data available
Map available - draft or final
For information call TOLL FREE: 1-800-USA-MAPS

GEOGRAPHIC INFORMATION SYSTEMS IDAHO USERS

LICENSE SYSTEM	COMPANY/AGENCY	TYPE*	CONTACT	PHONE NUMBER
INTERGRAPH	Bonneville County	2,2,2,2	Janet Cheney	529-1350 x1568
	Idaho Transportation Dept.	2,2,2,2	Ron Cole	334-8222
	Lockheed Idaho Technology (INEL)	2	Nielsen Burch	526-5676
	POWER Engineers/GGI	2	Dawn Garrett	378-6307
ARC/INFO	Ada County GIS	2,2,2,2,2,2 2,2,2	Sheldon Bluestein	364-2378
	Ada County Highway District	3,1,1,1,1,1	Diane Holloran	345-7635
	Ada Planning Association	2 (3)	Roni Gehring-Pratt	345-5274
	Boise Cascade	2(3), 2(3) 2(3), 2(3)	Nick Blacklock	384-7
	Boise City	3	Jim Hetherington	384-3900
	Canyon County Assessor	1	Harold Martin	454-7270
	Coeur d'Alene Tribe	4	Berne Jackson	686-1800 x218
	Holladay Engineering	1,1	Renee Bettis	642-3304
	Idaho Power Company	2,2,2,2,1	Frank Mynar	388-2977
	Idaho (State Agencies)			
	Dept. of Fish & Game	2	Bart Butterfield	334-2772
	Dept. of Lands	3,3,2,1,1	Dave Gruenhagen	334-0277
	Dept. of Water Resources	2,2,2,2,2,2, 2,2,2,1,1,1, 1,1,1,1	Tony Morse	327-7997
	Division of Environmental Quality	2,1	John Courtright	373-0271
	Military Division	2,2	Dick Nydegger	442-5287
	State Tax Commission	3,1 1,1,1,1,1	Rose Blazicevich	334-7750
	Kootenai County Assessor		Dave Williamson	769-4000 x459
	Kootenai County Planning & Zoning	1,1	Steve Kirk	769-4401
	Lockheed Idaho Technology, Inc.			
	INEL Computer Services	2	Pam Johnson	526-9379
	INEL Environmental Restoration	4,3(10)	Luke White	526-1036
	Morrison Knudsen	2,1	Chris Clay	386-5720
	Nez Perce Tribe	2,2,2	Jack Bell	843-7392
	Panhandle Health District	1,2	Randall Sounhein	667-3481
	Peregrine Fund	1	Richard Watson	362-3716
	Pocatello City	3	Dennis Hill	234-6230
	Potlatch	3,2(3),2(3), 2(3),2,2,2,2 2,2	Dennis Murphy	799-1156
	POWER Engineers/GGI	2,1,3	Dawn Garrett	378-6307
	Spatial Dynamics	3,3,3,3,3,3	Kim Johnson	345-6788
	Teton GIS		Julie Brizzee	525-8369

*1 - PC License
2 - Workstation License or Node Lock
3 - Multiuse License
4 - Terminal Access to Multiuser System

LICENSE SYSTEM	COMPANY/AGENCY	TYPE*	CONTACT	PHONE NUMBER
ARC/INFO	United States (Federal Agencies)			
	Bureau of Indian Affairs			
	Plummer	4	Mike Finity	686-1887
	Bureau of Land Management			
	(S.O. and all District offices)	3	Bill Yeager	384-3108
	Bureau of Reclamation	3,3	Mike Beaty	378-5172
	Forest Service			
	Forest Science Lab	3,2,1	Mike Radko	364-4396
	Forest Health Protection	2,1	Dick Halsey	364-4267
	Intermountain Research Station	1	Terri Jain	883-2331
	Boise National Forest	2,2,1	Joe Frost, Bill Rush	364-4203
	Caribou National Forest	3	Bob Bolt	236-7541
		3	Kim Mayeski	236-7539
	Payette National Forest	2,1	Dick Foster	634-0781
	Targhee National Forest	3,3	David Betz	624-3151
	National Biological Service	3	Tom Zariello	385-4800
	RRTAC-under USGS after 10/96			
	Natural Resources			
	Conservation Svc.	2,1	David Hoover	378-5785
	U.S. Geological Survey-WRD	2,2,2,2,2 2,2,2	Joe Spinazola	387-1390
	University of Idaho (Site Licensed)			
	Agriculture	1	Larry Lass	885-7629
	Agriculture Research-Kimberly	4,2,1	Clarence Robison	423-6610
	Anthropology	1	Leo Flynn	885-6123
	Capital Planning	3	Sylvia Ferrin	885-7100
	Environmental Science		Margarit Von Braun	885-6113
	Forestry	2,2,2	Alton Campbell	885-6441
	Geography	4,4,4,4	Karl Chang	885-6240
	Landscape Architecture	2	Toru Otawa	885-7729
	Library	1	Dennis Baird	885-7552
MOSS	Bureau of Land Management	4,3	Bill Yeager	384-3108
GRASS	Bureau of Land Management	2	Mike Candelaria	384-3108
	Natural Resources Conservation Svc.	1,1	David Hoover	334-1525
	Idaho Military Division	2	Dick Nydegger	422-5287
	National Biological Survey	2	Tom Zarriello	385-4800
	USGS after 10/96			

* 1 - PC License
2 - Workstation License or Node Lock
3 - Multiuse License
4 - Terminal Access to Multiuser System

[Editor's Note] This is not a list of all GIS users in Idaho. The expansion of GIS technology and its availability is fostering the growth of the number of GIS users. There are also frequent changes in personnel and telephone numbers. If your agency was omitted from this list, the omission was unintentional. To notify IGIAC that your agency should be included in the future, contact Hal Anderson at the Idaho Department of Water Resources, 1301 N. Orchard, Boise, Idaho 83706.

APPENDIX A IDAHO GEOGRAPHIC INFORMATION ADVISORY COMMITTEE IDAHO METADATA PROFILE

Version 4.0

of the
FGDC Content Standard for Digital Geospatial Metadata

By the IGIAC Metadata Subcommittee

December 7, 1995

Introduction

This latest version of the *Idaho Metadata Profile* is the culmination of the Metadata Subcommittee's work over the last year (1994-1995). The majority of the changes from version 3.0 reflect the subcommittee's goal of having the Idaho metadata standard conform, as much as possible, with the federal metadata standard (FGDC 1994) due to the considerable federal presence in Idaho and a desire to keep the number of metadata standards to a minimum. Hence, the Idaho metadata standard is now referred to as a *profile* of the federal standard. Many of the changes include elements being renamed or removed from version 3.0 of the Idaho standard and added from the federal standard.

A notable addition to the *Idaho Metadata Profile* is a section on **Spatial data organization** (**III.**, between **II. Projection information** and **IV. Contact information--***formerly 'III. Data Custodian'*) which allows for full documentation of raster data sets. Note that the Idaho profile is still at 10 sections because Status information was dropped and its remaining elements folded into **X. Access information** (*formerly IX.*). Appendix A contains the keyword list referenced in the 2nd draft (1/25/94) of the FGDC standard.

How to use the Profile

The Metadata Subcommittee has created a paper metadata form for users to fill out for their geospatial data sets. Also, the Subcommittee, as well as any interested users, will continue to work on and update its ARC/INFO AML interface for maintenance of metadata by users on their computers. This document is intended to explain each of the elements in the Standard and provide examples of their use. A set of 'production rules' has also been provided in Appendix A-2, which acts as a schematic or brief summary of the profile and its construction.

The Standard is organized at two levels: sections and elements. At the broadest level, there are ten sections that break down data documentation into general categories, e.g., projection information, the data dictionary (attribute info), and source information, to name a few. Elements address-specific properties which pertain to a section. For example, within the **Projection information** section (II.) there are elements such as 'projection name,' 'horizontal datum,' 'projection units,' etc.

Some elements, as well as entire sections, may be repeated where required. The **Data dictionary** section (V.) is a case in point. The whole section is repeated for *each* database associated with a spatial data set; and within the section, subsection 'B' is repeated when documenting each field in the database. In terms of filling out the paper form, the repetitive sections are on pages that can be photocopied where necessary and repetitive elements are listed a sufficient number of times to cover most documentation situations. Digital metadata interfaces to databases and GISs should handle repetitive sections and elements internally.

It is important to note that none of the elements or sections in the *Idaho Metadata Profile* are required for completion of a metadata form. However, the IGIAC strongly urges users to fill out all of the pertinent parts wherever possible. This will assist both data users and providers in their quest for complete information on the status of a spatial data set.

Where to get assistance

Should a user require assistance when filling out a metadata document, they can contact any member of the IGIAC Metadata Subcommittee listed in Appendix A-3.

Notes on symbology and terms used throughout the Standard

* - element/section repeated as many times as required
& - element from Ver. 3.0 of the IGIAC Metadata Standard and not in federal standard
()- former name, where different, in Ver. 3.0 of the IGIAC Metadata Standard; and FGDC element number
Example - an example of an element's use

I. Identification information

Abstract (data set description; 1.2.1): a text description of the spatial data set
Example: 100K Preston PLSS from USGS DLG files

***Theme keyword** (1.6.1.2): common-use terms used to describe the theme of a spatial data set (see Appendix A-1)
Examples: Public Land Survey System

*Place keyword** (geographic area; 1.6.2.2): the names of significant areas and/or places that fall within the extent of the spatial data set

Example1: SE Idaho
Example2: Bear Lake County

Bounding coordinates (map extent; 1.5.1: 1.5.1.1 - 1.5.1.4): the limits of coverage of a data set expressed in a minimum latitude and longitude rectangle

Example: 42.00, -112.00, 42.50, -111.00 NAD27

Purpose (intended use, intended scale, resolution of data; 1.2.2): synopsis of the purpose(s) or application(s) for which a data set was created; of equal importance, the definition should summarize or reference metadata elements that will aid the user in determining *limitations* of the data set that might result in misuse of the data, i.e., intended scale of use and minimum mapping unit where appropriate

Example: Data represent coarse ownership breakdowns at an intermediate scale

Supplemental information (1.2.3): other descriptive information about the data set

Example: previous versions of this data are archived by the custodian
Example: The data do not represent legally defined boundaries.

Native data set environment (file name; software and version; computer type and operating system, 1.13): data set file name assigned by the custodian; computer software format that the data set is maintained in; and the name of the computer (including model) and operating system from which the data set is available; NOTE: if the user is documenting a group of related spatial data sets, he/she should use the following element **cross reference**

Example: PRESPLS, ARC/INFO 7.0.3, DECStation AXP 3000700,
OSF/1 v. 3.0B

Cross reference (project name; 1.14): name of the project that the data set is intended for; NOTE: use this element to document a group of related spatial data sets, e.g., to document hydrography data for a state that is divided up by watersheds

Larger work citation (8.11): the information identifying a larger work in which the data set is included

Title (8.4)

Example: PLSS & ownership update

Time period of content (1.3): time period(s) for which the data set corresponds to the ground

Calendar date (9.1.1): the year, and, optionally, the month, and/or day

Example: 5/95

Currentness reference (1.3.1): the basis on which the time period of content information is determined

Example1: ground condition
Example2: publication date

Progress (1.4.1): the state of the data set
Example: complete

Maintenance and update frequency (1.4.2): the frequency with which changes and additions are made to the data set after the initial data set is completed
Example: monthly

Browse graphic (1.10): a graphic that provides an illustration of the data set. The graphic should include a legend for interpreting the graphic

Browse graphic file name (1.10.1): name of a related graphic file that provides an illustration of the data set
Example: prespls.tif

Browse graphic file description (1.10.2): a text description of the illustration
Example: 'snapshot' of the linework in the coverage

Browse graphic file type (1.10.3): graphic file type of a related graphic file
Example: TIFF

Data set credit (1.11): recognition of those who contributed to the data set
Example: Jane Smith, John Doe, & T. Rex

II. Projection information

Map projection name (projection name; 4.1.2.1.1): the name of the projection coordinate system in which the source was mapped
Example: UTM

Horizontal datum name (horizontal datum; 4.1.4.1): the identification given to the reference system used for defining the coordinate system
Example: NAS, NAD27, or North American Datum of 1927 (all three represent the same datum)

Ellipsoid name (ellipsoid; 4.1.4.2): identification given to established representations of the Earth's shape
Example: Clarke 1866

Altitude datum name (vertical datum; 4.2.1.1): the identification given to the level surface taken as the surface of reference from which altitudes are measured
Example: National Geodetic Vertical Datum of 1929

Planar distance units (projection units; 4.1.2.4.4): the units in which measurements on the map are given or in which a digital map is stored

Example: meters

Altitude distance units (4.2.1.3): units in which altitudes are recorded
Example: feet

Geographic coordinate units (4.1.1.3): units of measure used for the latitude and longitude values
Example: decimal degrees

UTM zone number (zone; 4.1.2.2.2.1): the number of the zone used in the Universal Transverse Mercator (UTM)
Example: 12

SPCS zone identifier (zone; 4.1.2.2.4.1): the number of the zone used in the State Plane Coordinate System (SPCS)
Example: 1103

***Standard parallel** (1st and 2nd standard parallels; 4.1.2.1.2.1): line of constant latitude at which the surface of the earth and the plane or developable surface intersect
Example: 42.0

Longitude of central meridian (central meridian; 4.1.2.1.2.2): the line of longitude that is in the center of the map from which coordinates to the right are positive and to the left are negative
Example: -114.0

Latitude of projection origin (4.1.2.1.2.3): the line of latitude in a conic projection at which Y-coordinates are measured north from
Example: 42.00

&**X-shift**: the constant added to the input X-coordinate, or easting, often to maintain coordinate precision; in a FGDC-formatted metadata report the value for this element will be reported under the **False easting** element and noted as such within parentheses
Example: 500000.0 (derived from 'x-shift' in the original data set)

&**Y-shift**: the constant added to the input Y-coordinate, or northing, often to maintain coordinate precision; in a FGDC-formatted metadata report the value for this element will be reported under the **False northing** element and noted as such within parentheses
Example: -4000000.0 (derived from 'y-shift' in the original data set)

False easting (4.1.2.1.2.4): the X-coordinate value, or easting, assigned to the point where the projection's latitude of origin and central meridian intersect; default is 0.0
Example: 100000.0

False northing (4.1.2.1.2.5): the Y-coordinate value, or northing, assigned to the point where the projection's latitude of origin and central meridian intersect; default is 0.0
Example: 500000.0

&**Coordinate precision**: the precision with which object coordinates are managed or maintained in the native software system and which are to be expected in the transfer
Example: double

III. Spatial data organization

Indirect spatial reference (3.1): name of types of geographic features, addressing schemes, or other means through which locations are referenced in the data set
Example: archeological sites located up to 1000 meters from data points in coverage

Direct spatial reference method (data structure; 3.2): the data structure used to represent mapped features in the product
Example: vector

*__SDTS point and vector object type__ (spatial object type; 3.3.1.1): the name of a spatial object type included in the data set; the following table is provided to show the more common SDTS object types and their equivalents in ARC/INFO:

SDTS OBJECT TYPE	EQUIVALENT ARC/INFO FEATURE
Entity point	point
Node	node
Complete chain	arc
GT-Polygon	polygon
Grid	grid

Raster object type (3.4.1): raster spatial objects used to locate zero-, one-, two- , or three-dimensional locations in the data set
Example: pixel or grid cell
Row count (3.4.2): the maximum number of raster objects along the y-axis
Example: 500

Column count (3.4.3): the maximum number of raster objects along the x-axis
Example: 750

Vertical count (3.4.4): the maximum number of raster objects along the vertical (z-axis); for use with rectangular, volumetric raster objects (voxels)
Example: 300

&**Acquisition date** (*new*): the date a sensor collects data for a particular area of the Earth
Example: 5/14/95

&**Path/Row** (*new*): part of a numbering system used to identify satellite images. The **path** is along the orbit track and the **row** is across the orbit track.

Example: 40/12

&**Percent cloud cover** (*new*): the percentage of a satellite image that is covered by clouds

Example: 25%

&**Spatial resolution** (*new*): a measure of the smallest object that can be resolved by the sensor, or the area on the ground represented by each pixel (ERDAS 1991, 14)

Example: 79m X 79m

&**Radiometric resolution** (*new*): the maximum number of data file values in each band; this is referred to by the number of bits the recorded energy is divided into (ERDAS 1991, 16)

Example: 8-bit

&**Spectral resolution** (*new*): the specific wavelength intervals in the electromagnetic spectrum a sensor can record (ERDAS 1991, 14)

Example: 0.5 - 0.6 µm

&**File header** (*new*): a file or series of records found before the actual image data that contains information about the data

Example1: present at the beginning of the image file
Example2: idimage.hed

&**Header size** (*new*): number of bytes or records that comprise the header if it is in the image file, or number of bytes if it is a separate file

Example: two 80-byte records

&**Data type** (*new*): data type of the raster object value

Example: real or integer

&**Reference cell coordinates** (*new*): map coordinates of the origin cell (usually at column = 1, row = 1) in units defined by the projection

Example: 567432,4579834

&**Reference cell relative origin** (*new*): relative position of the **reference cell coordinates** in the origin cell

Example1: reference cell coordinates located at the center of the origin cell
Example2: reference cell coordinates located at the upper-left of the origin cell

&**Reference cell relative position** (*new*): position of the origin cell relative to the entire raster:

Example1: upper-left corner of the raster, i.e., column = 1 and row = 1
Example2: lower-left corner of the grid (1,1)

<u>IV. Contact information</u> *(formerly 'Data Custodian')*

Contact person primary (contact person & title; 1.9 (format in 10.1.1)): the name of the individual who currently holds the data set

Example: Jane Doe

Contact position (contact person & title; 1.9 (format in 10.3)): the title of the individual who currently holds the data set

Example: GIS Specialist

Contact organization primary (contact organization; 1.9 (format in 10.1.2)): the name of the organization acting as custodian of the data

Example: Department of Water

Contact address (contact address, tel. #, & FAX #; 1.9 (format in 10.4)): the address of the organization or individual

Address (10.4.2):

Example: 1111 Main St.

City (10.4.3):

Example: Anytown

State (10.4.4):

Example: ID

Postal code (10.4.5):

Example: 12345-6789

Contact voice telephone (10.5): telephone number by which the individual can be reached

Example: 208-555-4444

Contact TDD/TTY telephone (10.6): the telephone number by which hearing-impaired individuals can contact the organization or individual

Example: 208-555-2222

Contact facsimile telephone (10.7): telephone number of a FAX machine of the organization or individual

Example: 208-555-7777

Contact electronic mail address (10.8): the address of the electronic mailbox of the organization or individual

Example: jdoe@agency.gov

Hours of service (10.9): time period when individuals can speak to the organization or individual.

Example: 8 a.m. - 5 p.m. MST/MDT

*V. Data dictionary

The Data Dictionary section is designed to document the contents of each table or database associated with the data set described in the metadata document. Subsection A., Entity Elements, briefly describes a single table or database. Subsection B., Attribute Elements, describes and is repeated, in its entirety, for each field in the table or database listed in subsection A.

NOTE: Only those tables and fields created or altered by the user need to be documented. For example, the ARC/INFO GIS software creates a set of standard databases and fields with each coverage that are updated through processing and shouldn't be changed by the user. Since they are also self-explanatory in their intent, documentation is not needed.

Entity and attribute overview (5.2.1): detailed summary of the information contained in a data set.
Example: polygon attribute table of PLSS sections; codes derived from USGS Major/Minor values in the DLG source data

Entity and attribute detail citation (5.2.2): reference to the complete description of the entity types, attributes, and attribute values for the data set.
Example: USGS DLG-3 User Guide, 1987

A. Entity (table) elements

Entity type label (table identity; 5.1.1.1): the identity or label associated with a database or table in a logical data model, assigned by the owner
Example: PRESPLS.PAT

Entity type definition (table definition; 5.1.1.2): a short description of the database
Example: polygon attribute table

*B. Attribute elements

Attribute label (attribute identity; 5.1.2.1): the database label associated with an attribute
Example: TDIR

Attribute definition (5.1.2.2): the definition of the attribute label
Example: township direction from the base meridian

Attribute definition source (5.1.2.3): the source from which the attribute definition was obtained
Example: derived from DLG Major/Minor codes, 'USGS DLG-3 User Guide, 1987'

&**Attribute domain**: the valid values, or range, for a given attribute; or citation for the source of value; or brief reason why a domain is not included
Example: E, W

&**Attribute format type**: the computer representation of the attribute
Example: character

&**Attribute format length**: the maximum number of bytes used to represent the attribute
Example: 2

Attribute measurement resolution (attribute significant digits; 5.1.2.6): the smallest unit increment to which an attribute value is measured
Example: 55-meters

Attribute units of measure (5.1.2.5): the standard of measurement for an attribute value
Example: meters

Attribute value accuracy (5.1.2.9.1): an estimate of the accuracy of the assignment of attribute values
Example: 90%

Attribute value accuracy explanation (5.1.2.9.2): the definition of the **Attribute value** accuracy measure and units, and a description of how the estimate was derived
Example1: Expected range of values checked with the ARC/INFO command CODEFIND
Example2: Contents of the field checked against the manual from which it was derived

Attribute measurement frequency (5.1.2.10): the frequency with which attribute values are added
Example: semiannually

*<u>VI. Source information</u>

Source citation (2.5.1.1 (format in section 8)):

Title (source name; 8.4): brief descriptive name of the source material
Example: surface management map of the 100K Preston quad

Originator (source contact; 8.1): the name of person who has previously held the data set and other relevant contact information where possible
Example: U.S. Geological Survey--National Mapping Center

Publication date (source date; 8.2): date for which the source data set is valid
Example: 1978

Source contribution (source description; 2.5.1.6): description of the source material and/or information contributed by it to the data set

Example: surface management, or coarse ownership, is broken down by federal agency, State ownership is grouped together as well as private ownership

Source scale denominator (source scale; 2.5.1.2): scale of source material

Example: 100000

Type of source media (source medium, medium condition; 2.5.1.3): the medium on which source was prepared or from which a digital spatial data set was digitized

Example: folded paper map

*<u>**VII. Processing steps**</u>

Process description (procedure, procedure tolerance(s); 2.5.2.1): an explanation of the event and related parameters

Example: paper base map registered to a Hitachi 3648S Digitizing tablet using an affine transformation into the UTM coord. system; RMS 0.002; arcs digitized into coverage through pcARC/INFO 3.4.1 ARCEDIT

Process date (procedure date; 2.5.2.3): date that procedure was conducted

Example: 1/14/93

Process time (2.5.2.4): the time when the event was completed

Example: 2:05 pm

Source produced citation abbreviation (data set version number; 2.5.2.5): the unique version number of the data set that relates directly to the completion of a specified procedure or project

Example: 2.0

Process contact (procedure contact & organization; 2.5.2.6): the identity of the individual or organization responsible for the execution of the specified procedure

Example: Robert Harmon, IDWR

<u>**VIII. Data quality**</u>

Horizontal positional accuracy value (positional accuracy; 2.4.1.2.1): the absolute measure of error referenced in the units of the coordinate system

Example: +/- 55 meters

Horizontal positional accuracy explanation (positional accuracy explanation; 2.4.1.2.2): a text explanation of how the method was applied to determine an estimate of positional accuracy

Example: comparison of plotted linework and polygon attributes to Mylar of quad; all line-work was checked against the map

Vertical positional accuracy value (2.4.2.2.1): an estimate of the accuracy of the vertical coordinate measurement in the data set expressed in (ground) meters

Example: ± 10 m

Vertical positional accuracy explanation (2.4.2.2.2): the identification of the test that yielded the **vertical positional accuracy value**

Example: contour lines generated from vertical data compared against 24K map

Attribute accuracy value (attribute accuracy; 2.1.2.1): a measure of the confidence with which features are correctly portrayed in the data set, usually represented as a percentage

Example: 99

Attribute accuracy explanation (2.1.2.2): a text explanation of how the method was applied to determine an estimate of attribute accuracy

Example: all polygon attributes were checked against corresponding data on an acetate of the quad map

Logical consistency report (data model integrity; 2.2): a text explanation of the integrity of the relationships between geometric objects in the data set, and any topological tests run

Example: data set is topologically-structured polygon data with nodes at all intersections (ARC BUILt)

Completeness report (completeness; 2.3): information about selection criteria, definitions used, and other relevant mapping rules that were used to derive the data set in analog or digital form

Example1: all wetlands compiled whose areal extent exceeds 50 hectares were included; features less than 100 meters wide were not included

Example2: all paved roads from county through Federal designations

IX. Metadata reference

Metadata date (metadata creation date, metadata revision date; 7.1): the date that the metadata document was created or last updated

Example: 1/14/93

Metadata contact (7.4): party responsible for the metadata information

Example: Robert Harmon, IDWR

Metadata standard name (7.5): the name of the metadata standard used to document the data set

Example1: Idaho Metadata Profile

Example2: FGDC Content Standards for Digital Geospatial Metadata

Metadata standard version (7.6): the version of the metadata standard used

Example: 4.0

Metadata access constraints (7.8): restrictions and legal prerequisites for accessing the metadata. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the metadata

Example: person(s) not working in this organization must first contact the data custodian before viewing the metadata

Metadata use constraints (7.9): restrictions and legal prerequisites for using the metadata after access is granted. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the metadata

Example: this metadata set may not be distributed outside of this organization

X. Access information

Non-digital form (6.4.1): the description of options for obtaining the data set on non-computer-compatible media

Example1: tabular printout

*__Format name__ (transfer format; 6.4.2.1.1): the name of the digital data transfer format to be associated with a data transfer size

Example1: ARC/INFO EXPORT
Example2: DLG-3 Optional

File decompression technique (6.4.2.1.6): recommendations of algorithms or processes (including means of obtaining these algorithms or processes) that can be applied to read or expand data sets to which data compression techniques have been applied

Example: pkunzip 2.04g

Transfer size (6.4.2.1.7): the size in megabytes of the digital data set in a specified transfer format

Examples: 4.2

Online option (6.4.2.2.1): information required to directly obtain the data set electronically

Computer contact information (6.4.2.2.1.1): instructions for establishing communications with the distribution computer

Network resource name (6.4.2.2.1.1.1.1): name of the file or service from which the data set can be obtained; NOTE: this appears as the only element under the FGDC compound element **Network address** (6.4.2.2.1.1.1)

Example: ftp://igiac.state.id.us/pub/outgoing/data/plss

*__Dialup instructions__ (6.4.2.2.1.1.2): information required to access the distribution computer remotely through telephone lines.

Lowest BPS (6.4.2.2.1.1.2.1): lowest or only speed for the connection's communication, expressed in bits per second
Example: 300 baud

Highest BPS (6.4.2.2.1.1.2.2): highest speed for the connection's communication, expressed in bits per second. Used in cases when a range of rates are provided
Example: 14400 baud

Number databits (6.4.2.2.1.1.2.3): number of data bits in each character exchanged in the communication
Example: 8

Number stopbits (6.4.2.2.1.1.2.4): number of stop bits in each character exchanged in the communication
Example: 1

Parity (6.4.2.2.1.1.2.5): parity error checking used in each character exchanged in the communication
Example: n (none)

Compression support (6.4.2.2.1.1.2.6): data compression available through the modem service to speed data transfer
Example: V.32

Dialup telephone (6.4.2.2.1.1.2.7): the telephone number of the distribution computer
Example: 208-555-9999

Dialup file name (6.4.2.2.1.1.2.8): the name of a file containing the data set on the distribution computer
Example: prespls.e00

Access instructions (6.4.2.2.1.2): instructions on the steps required to access the data set
Example1: send email to the custodian requesting specific information
Example2: anonymous ftp to site & download README file for instructions

***Offline option** (transfer mode, transfer instructions; 6.4.2.2.2): information about media-specific options for receiving the data set

Offline media (6.4.2.2.2.1): name of the media on which the data set can be received
Example: 8 mm cartridge tape

Recording capacity (6.4.2.2.2.2)

Recording density (6.4.2.2.2.2.1): the density in which the data set can be recorded
Example: 2.6

Recording density units (6.4.2.2.2.2.2): the units of measure for the recording density
Example: gigabytes

Recording format (6.4.2.2.2.3): options available or method used to write the data set to the medium
Example: tar

Access constraints (distribution policy; 1.7): a description of distribution and ownership policy as provided by the custodian
Example: data are available under the provisions of the Idaho Open Records Law

Use constraints (copyright status; 1.8): whether the data are in the public domain or are copyrighted with some type of restriction on usage
Example: public domain

Distribution liability (custodial liability; 6.3): the liability of the custodian related to the quality and use of the data set
Example: Custodian does not assume liability

Fees (6.4.3): the fees and terms for retrieving the data set
Example: $20 for the first data set, $5 for each additional data set

Ordering instructions (6.4.4): general instructions and advice about, and special terms and services provided for, the data set by the distributor
Example: by mail -- send a letter detailing the data requested and the media (supported by the data provider) that you want the data on; by email/ftp -- submit a request by email detailing where to send the data by ftp

Turnaround (6.4.5): typical turnaround time for the filling of an order
Example: 10 working days unless contacted by the data provider

Technical prerequisites (6.6): description of any technical capabilities that the consumer must have to use the data set in the form(s) provided by the distributor
Example: should have ARC/INFO 7.0.x

Security classification (1.12.2): name of the handling restrictions on the data set
Example: restricted

Security handling description (1.12.3): additional information about the restrictions on handling the data set
Example: check with data custodian on access restrictions

References

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IGIAC Metadata Subcommittee. 1994. Memo: Differences Between the IGIAC and the FGDC Metadata Standards.

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rh, 12.28.98

APPENDIX A 1 FGDC CONTENT STANDARDS FOR SPATIAL METADATA DEFAULT THESAURUS[1]

Keywords

ANTHROPOGENIC *

Administrative Units*
Cadastral *
Census Units *
Communication Lines *
Named Places *
Pipelines *
Political Units *
Populated Places *
Population *
Public Land Survey System *
Railroads *
Roads *
Structures *
Transmission Lines *
Transportation *
Waterways *

ATMOSPHERIC COMPOSITION

Aerosols
Air Quality
Ash
Carbon Dioxide
Chlorofluorocarbons
Clouds
Contaminants
Humidity
Methane
Nitric Acid
Nitrogen
Nitrogen Dioxide
Oxygen
Ozone
Trace Elements
Trace Gases
Tracers
Water Vapor

ATMOSPHERIC DYNAMICS

Altitude
Atmospheric Temperature
Climate *
Cloud Types
Evaporation
Evapotranspiration
Geopotential Height
Heat Flux
Humidity
Paleoclimate Indices
Precipitation
Pressure
Solar Radiation
Storms
Visibility
Winds

BIOLOGICAL ENTITIES

Birds
Domesticated Animals
Domesticated Plants
Endangered Species
Land Wildlife
Microorganisms
Minor Species
Ocean Vegetation
Ocean Wildlife
Surface Vegetation

[2] - Adapted from Directory Interchange Format (DIF) Manual, April 1993, version 4.1, section 2.11, "Parameter measured." Entries marked with an asterisk (*) are extensions to the DIF Manual.

DISEASES

Addiction	Immunologic	Otorhinolaryngologic
Bacterial	Infection	Parasitic
Cardiovascular	Injury	Poisoning
Chronic	Musculoskeletal	Pregnancy Complications
Communicable	Neonatal	Respiratory
Dermatologic	Neoplasms	Skin
Digestive System	Nervous System	Stomatognatic
Endocrine	Nutritional and Metabolic	Urologic
Eye	Occupational	Virus
Fungal	Ophthalmic	

EARTH RADIATIVE PROCESSES

Albedo	Irradiance	Temperature
Brightness Temperature	Radiance	Thermal Inertia
Heat Flux	Solar Activity	

GEODYNAMIC FEATURES

Earthquakes	Gravity Fields	Structures
Erosion	Magnetic Fields	Tectonophysics
Geodesy	Polar Motion	Terrain Elevation
Geothermal	Seismic	Volcanoes

GEOGRAPHY AND LAND COVER

Albedo	Ice	Soils
Cultural Features	Lakes	Surface Vegetation
Elevation	Landforms	Surface Water
Fires	Rivers	Topographic Data
Glaciers	Snow	Wetlands

GEOLOGICAL PARAMETERS

Age Determinations	Igneous and Metamorphic Rocks	Petrology
Aquifer *	Lithology	Sedimentary rocks
Coal	Mineralogy and Crystallography	Soils
Economic Minerals	Paleontology	Stratigraphy
Geochemical Analysis	Petroleum	Surficial Geology *

HEALTH CARE

Clinical Care	Community Care	Institutional Care

HYDROLOGIC PARAMETERS

Contamination	Infiltration	Solids
Deposition	Oxygen Demand	Surface Water
Erosion	Precipitation	Temperature
Evaporation	Rivers	Turbidity
Glaciers	Runoff	Water Vapor
Ground Water	Sedimentation	Wetlands

MAGNETIC AND ELECTRIC FIELDS

Activity Indices	Electric Wave Spectra (AC)	Magnetic Wave Spectra (AC)
Electric Fields (DC)	Magnetic Fields (DC)	

OCEAN COMPOSITION

Alkalinity	Nitrate	Phytoplankton
Aquatic Plants	Nitric Acid	Pigment Concentration
Biomass	Nitrite	Pollutants
Carbon Dioxide	Nitrogen	Salinity
Chemical Tracers	Nitrogen Dioxide	Sea Ice
Chlorophyll	Nutrients	Sediments
Conductivity	Ocean Wildlife	Silicate
Dissolved Solids	Organic Matter	Suspended Solids
Light Transmission	Oxygen	Trace Elements
Major Elements	pH	Upwelling
Minor Species	Phosphates	

OCEAN DYNAMICS

Bathymetry	Primary Production	Tides
Brightness Temperature	Sea Ice	Turbidity
Currents	Sea Level	Upwelling
Evaporation	Sea Surface Height	Waves
Geopotential Height	Sedimentation	Wind
Heat Flux	Swell	
Pressure	Temperature	

PUBLIC HEALTH

Accidents	Drug Contamination	Epidemiologic Measurements
Behavior	Environmental Health	Food Poisoning
Disease Outbreaks	Epidemics	Nutrition

VITAL STATISTICS

Demography	Morbidity	Mortality

APPENDIX A-2 PRODUCTION RULES

`A production rule specifies the relationship between a compound element, and data elements and other (lower-level) compound elements. Each production rule has a left side (identifier) and a right side (expression) connected by the symbol "=", meaning that the term on the left side is replaced by or produces the term on the right side.' (FGDC 1994)

The symbols used in the production rules have the following meaning:

Symbol	Meaning
=	is replaced by, produces, consists of
+	and
m{}n	iteration - the term(s) enclosed is(are) repeated from "m" to "n" times

IGIAC Metadata Subcommittee symbols

* -	element/section repeated as many times as required
& -	element from Ver. 3.0 of the IGIAC Metadata Standard and not in Federal standard
( ) -	FGDC element number

Examples:

a = b + c	"a consists of b and c"
a = 4{b}6	"a consists of four to six occurrences of b"

Idaho Metadata Profile production rules

I. Identification information =

	Abstract +	(1.2.1)
*	0{Theme keyword}n +	(1.6.1.2)
*	0{Place keyword}n +	(1.6.2.2)
	Bounding coordinates +	(1.51: 1.5.1.1 - 1.5.1.4)
	Purpose +	(1.2.2)
	Supplemental information +	(1.2.3)
	Native data set environment +	(1.13)
	Cross reference =	(1.14)
	Larger work citation =	(8.11)
	Title +	(8.4)
	Time period of content =	(1.3)
	0{Calendar date +	(9.1.1)
	Currentness reference}1 +	(1.3.1)
	Progress +	(1.4.1)
	Maintenance and update frequency +	(1.4.2)

I. Identification information, continued.

	Browse graphic =	(1.10)
	0{Browse graphic filename +	(1.10.1)
	Browse graphic file description +	(1.10.2)
	Browse graphic file type}1 +	(1.10.3)
	Data set credit	(1.11)

II. Projection information =

	Map projection name +	(4.1.2.1.1)
	Horizontal datum name +	(4.1.4.1)
	Ellipsoid name +	(4.1.4.2)
	Altitude datum name +	(4.2.1.1)
	Planar distance units +	(4.2.4.4)
	Altitude distance units +	(4.2.1.3)
	Geographic coordinate units +	(4.1.1.3)
	UTM zone number +	(4.1.2.2.2.1)
	SPCS zone identifier +	(4.1.2.2.4.1)
*	0{Standard parallel}n +	(4.1.2.1.2.1)
	Longitude of central meridian +	(4.1.2.1.2.2)
	Latitude of projection origin +	(4.1.2.1.2.3)
&	X-shift +	
&	Y-shift +	
	False easting +	(4.1.2.1.2.4)
	False northing +	(4.1.2.1.2.5)
&	Coordinate precision	

III. Spatial data organization =

	Indirect spatial reference +	(3.1)
	Direct spatial reference method +	(3.2)
*	0{SDTS point and vector object type}n +	(3.3.1.1)
	Raster object type +	(3.4.1)
	Row count +	(3.4.2)
	Column count +	(3.4.3)
	Vertical count +	(3.4.4)
&	Acquisition date +	
&	Path/Row +	
&	Spatial resolution +	
&	Percent cloud cover +	
&	Spectral resolution +	
&	Spectral resolution +	
&	File header +	
&	Header size +	
&	Data type +	
&	Reference cell coordinates +	

III. Spatial data organization, continued.

& Reference cell relative origin +	
& Reference cell relative position	
IV. Contact information =	
Contact person primary +	(1.9 (10.1.1))
Contact position +	(1.9 (10.3))
Contact organization primary +	(1.9 (10.1.2))
Contact address =	(1.9 (10.4))
0{Address +	(10.4.2)
City +	(10.4.3)
State +	(10.4.4)
Postal code}1 +	(10.4.5)
Contact voice telephone +	(10.5)
Contact TDD/TTY telephone +	(10.6)
Contact facsimile telephone +	(10.7)
Contact electronic mail address +	(10.8)
Hours of service	(10.9)
*__V. Data dictionary = 0{__	
Entity and attribute overview +	(5.2.1)
Entity and attribute detail citation +	(5.2.2)
A. Entity elements =	
0{Entity type label +	(5.1.1.1)
Entity type definition}1 +	(5.1.1.2)
* B. Attribute elements =	
0{Attribute label +	(5.1.2.1)
Attribute definition +	(5.1.2.2)
Attribute definition source +	(5.1.2.3)
& Attribute domain +	
& Attribute format type +	
& Attribute format length +	
Attribute measurement resolution	(5.1.2.6)
Attribute units of measurement	(5.1.2.5)
Attribute value accuracy	(5.1.2.9.1)
Attribute value accuracy explanation	(5.1.2.9.2)
Attribute measurement frequency}n **}n**	(5.1.2.10)
*__VI. Source information = 0{__	
Source citation =	(2.5.1.1)
0{Title +	(8.4)
Originator +	(8.1)
Publication date}1 +	(8.2)
Source contribution +	(2.5.1.6)

VI. Source information, continued.

Source scale denominator +	(2.5.1.2)
Type of source media	(2.5.1.3)

VII. Processing steps =

Process description +	(2.5.2.1)
Process date +	(2.5.2.3)
Process time +	(2.5.2.4)
Source produced citation abbreviation +	(2.5.2.5)
Process contact	(2.5.2.6)

VIII. Data quality =

Horizontal positional accuracy value +	(2.4.1.2.1)
Horizontal positional accuracy explanation +	(2.4.1.2.2)
Vertical positional accuracy value +	(2.4.2.2.1)
Vertical positional accuracy explanation +	(2.4.2.2.2)
Attribute accuracy value +	(2.1.2.1)
Attribute accuracy explanation +	(2.1.2.2)
Logical consistency report +	(2.2)
Completeness report	(2.3)

IX. Metadata reference =

Metadata date +	(7.1)
Metadata contact +	(7.4)
Metadata standard name +	(7.5)
Metadata standard version +	(7.6)
Metadata access constraints +	(7.8)
Metadata use constraints	(7.9)

X. Access information =

	Non-digital form +	(6.4.1)
*	0{Format name +	(6.4.2.1.1)
	File decompression technique +	(6.4.2.1.6)
	Transfer size}n +	(6.4.2.1.7)
	Online option =	(6.4.2.2.1)
	Computer contact information =	(6.4.2.2.1.1)
	Network resource name +	(6.4.2.2.1.1.1.1)
*	Dialup instructions =	(6.4.2.2.1.1.2)
	0{Lowest BPS +	(6.4.2.2.1.1.2.1)
	Highest BPS +	(6.4.2.2.1.1.2.2)
	Number databits +	(6.4.2.2.1.1.2.3)
	Number stopbits +	(6.4.2.2.1.1.2.4)
	Parity +	(6.4.2.2.1.1.2.5)
	Compression support +	(6.4.2.2.1.1.2.6)
	Dialup telephone +	(6.4.2.2.1.1.2.7)

X. Access information, cont.

	Dialup file name}n +	(6.4.2.2.1.1.2.8)
	Access instructions +	(6.4.2.2.1.2)
*	Offline option =	(6.4.2.2.2)
	0{Offline media +	(6.4.2.2.2.1)
	Recording capacity =	(6.4.2.2.2.2)
	0{Recording density +	(6.4.2.2.2.2.1)
	Recording density units}n +	(6.4.2.2.2.2.2)
	Recording format}n +	(6.4.2.2.2.3)
	Access constraints +	(1.7)
	Use constraints +	(1.8)
	Distribution liability +	(6.3)
	Fees +	(6.4.3)
	Ordering instructions +	(6.4.4)
	Turnaround +	(6.4.5)
	Technical prerequisites +	(6.6)
	Security classification +	(1.12.2)
	Security handling description	(1.12.3)

APPENDIX A-3 IGIAC METADATA SUBCOMMITTEE MEMBERS AVAILABLE FOR ASSISTANCE

Luke White
Julie Brizzee
Lockheed--Idaho Technologies Co.
765 Lindsay Blvd.
Idaho Falls, ID 83415
526-1036

Bart Butterfield
Idaho Department of Fish and Game
600 S. Walnut Ave.
Boise, ID 83712
334-2772

Alan Westphal
Natural Resources Conservation Service
3244 Elder Street, Rm 124
Boise, ID 83705
334-1525

Jeff Mork
B.L.M. State Office
3380 Americana Terrace
Boise, ID 83706
384-3000

Joe Spinazola
USGS-WRD
230 Collins Rd.
Boise, ID 83702
387-1390

Hal Anderson
Bob Harmon
Idaho Dept. of Water Resources
1301 N. Orchard St.
Boise, ID 83706-2237
327-7900

Dick Halsey
USDA Forest Service
Forest Pest Management
1750 Front St., Room 202
Boise, ID 83702
364-4267

APPENDIX A-4 METADATA FORM

NOTE: An explanation of each section and element in this form is found in the IGIAC Idaho Metadata Profile, Ver. 4.0.

I. Identification Information
Abstract
(description)____
Theme Keyword(s) ____
Place
Keyword(s)____
Bounding Coord.'s S___________ W -______________ N ______________ E -___________ ____
Purpose____
Supplemental
Information____
Cross Reference (project title)_________________________ Browse Graphic Attached (circle one) YES NO
Time period: Date______________ Currentness
reference____
Progress(circle one) COMPLETE PARTIAL Maintenance & Update
Frequency_______________________________
Native Data Set Environment:
File Name _____________ Software and Version ____________ Computer Type and OS ______________
Data Set Credit ____

II. Projection Information
Map Projection Name _____________ Horizontal Datum or Ellipsoid _________ Altitude Datum ___________
Planar Distance Units __________ Altitude Distance Units __________
UTM/SPCS (circle one) Zone __________ 1st Std. Parallel ____ _______ 2nd Std. Parallel _________ _____
Central Merid. -_____ _____ ____Lat. of Proj. Origin ___ ___ ___ X-Shift ____________
Y-Shift ____________ Geo. Coordinate Units ___________False Easting ____________
False Northing ___________ Coord. Precision (circle one) SINGLE DOUBLE

III. Spatial Data Organization
Indirect Spatial Ref.____________________________ Direct Spatial Ref. Method (circle one) RASTER VECTOR
SDTS Point & Vector Object Type
(features)____
Acquisition Date _____________ Path/Row ______/_____ Percent Cloud Cover _____________
Raster Object Type _________________ Row Count ________ Column Count _________ Vertical Count__________
Resolution: Spatial_________________ Radiometric___________________ Spectral___________________
File Header_______________________________ Header Size____________________
Reference Cell: Coordinates ____________, ____________ Data Type (circle one) REAL INTEGER
Relative Origin ______________________________ Relative Position _________________________________

IV. Contact Information

Contact Person and Title

____

Organization

____

Address: Street_______________________________ City ______________ State ___ Zip Code _________

Phone (____) ____-_________ Fax (____) ____-__________ TDD/TTY Phone (____) _____-_____________

Electronic Mail Address___________________________________ Hours of Service____________________

VIII. Data Quality

Horizontal: Positional Accuracy _________ Explanation____

Vertical: Positional Accuracy _________ Explanation____

Attribute: Positional Accuracy _________ Explanation____

Logical Consistency Report ____

Completeness report ____

IX. Metadata Reference

Date _________________ Contact ____

Constraints: Access ____

Use ____

X. Access Information

Non-digital Form ____

Constraints: Access ________________________________ Use ___________________________________

Distribution Liability ____

Fees __________ Turnaround ___________ Technical Prerequisites ____________________________

Ordering Instructions ____

Security Classification ____________ Security Handling Description __________________________

(Repeat for each format type)

(Digital)Format Name __________ File Decompression Technique _________ Transfer Size (MB) _________

(Digital)Format Name __________ File Decompression Technique _________ Transfer Size (MB) _________

(Digital)Format Name __________ File Decompression Technique _________ Transfer Size (MB) _________

(Digital)Format Name __________ File Decompression Technique _________ Transfer Size (MB) _________

(Repeat for each access option)

Online Option:

Network Resource Name

____

Dialup Instructions:

Lowest BPS_______ Highest BPS _______ Number Databits ____ Number Stopbits ____ Parity____

Compression Support _____ Dialup Telephone (____) ____-_______ Dialup File Name _______________

Access Instructions ____

Online Option:

Network Resource Name ____

Dialup Instructions:

Lowest BPS_______ Highest BPS _______ Number Databits ____ Number Stopbits ____ Parity____

Compression Support _____ Dialup Telephone (____) ___-_______ Dialup File Name _______________

Access Instructions ____

Offline Option:

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

Offline Media ________ Recording Capacity (density & units) _________ Recording Format _____________

V. Data Dictionary (Repeat for each associated table or database)

Overview (summary)

____

Citation____

A. Entity (table) Element

Label (table name) _________________

Definition (description)

____

B. Attribute Elements

Attribute Label ____________________

Definition (description)

____

Source

____

Domain____

Format Type __________ Format Length _____ Measurement Resolution______ Units _______

Accuracy_____ Accuracy Explanation

____

Measurement Frequency

____

Attribute Label ____________________

Definition

(description)____

Source

____

Domain____

Format Type __________ Format Length _____ Measurement Resolution______ Units _______

Accuracy_____ Accuracy

Explanation____

Measurement Frequency

____

Attribute Label ____________________

Definition (description) ____

Source ____
Domain____
Format Type __________ Format Length _____ Measurement Resolution______ Units _______
Accuracy_____ Accuracy
Explanation____
Measurement
Frequency____

Attribute Label ____________________
Definition (description) ____
Source ____
Domain____
Format Type __________ Format Length _____ Measurement Resolution______ Units _______
Accuracy_____ Accuracy
Explanation____
Measurement
Frequency____
Attribute Label ____________________
Definition
(description)____
Source
____
___
Domain____
____
Format Type __________ Format Length _____ Measurement Resolution______ Units _______
Accuracy_____ Accuracy
Explanation____
Measurement
Frequency____

VI. Source Information (Repeat for each source used)

Source Citation: Title
____
Originator ____ Publication
Date_______________
Source Contribution
____
Scale ____________ Type of Source Medium (&. condition)
____

Source Citation: Title
____
Originator ____ Publication
Date__________________
Source Contribution
____
Scale ____________ Type of Source Medium (&. condition) ____

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

Source Citation: Title ____
Originator ______________________________ Publication Date__________
Source Contribution ____
Scale ________ Type of Source Medium (&. condition) ____________________

VII. Processing Steps (Repeat for each processing step)
Description (& tolerances)
____

____

____
Date ________ Time ______ Source produced citation abbreviation (version)______________
Process Contact ____

Description (& tolerances) ____________________________________

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Date ____________ Time _________ Source produced citation abbreviation (version)_____________________
Process Contact

Description (& tolerances)

Date ____________ Time _________ Source produced citation abbreviation (version)_______________________
Process Contact

Description (& tolerances)

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Process Contact

Description (& tolerances)

Date ____________ Time _________ Source produced citation abbreviation (version)_______________________
Process Contact

APPENDIX B IGIAC GPS Guidelines for Resource Grade Accuracy

Adopted October 12, 1994 Version 1.10

The following guidelines are considered to be the minimum requirements necessary to achieve the specified level of accuracy. Each resource/program specialist will have to determine his or her own Global Position System (GPS) accuracy requirements. In addition the manufacturer's instructions for the specific GPS unit in use should be followed.

I. Terminology

Base (reference, control) Station: A GPS receiver set up at a known location.

CEP (circular error probable): Statistical measure of accuracy; it implies the probability that 50 percent of the positions obtained will fall within a circle of the specified radius. Generally speaking, the accuracies mentioned below refer to CEP.

> Note: Five meter CEP accuracy at the 50 percent confidence level converts approximately to a circle of nine meter radius at the 90 percent confidence level. This is nearly 30 feet and we are considering horizontal accuracy only. The vertical accuracy of resource grade GPS receivers is up to two times worse than the horizontal accuracy. National Map Accuracy standards require that 90 percent of the points tested on a 1:24,000-scale map should not be in error by more than 40 feet. So, 2-5 meter CEP does meet the National Map Accuracy standards for 1:24,000-scale mapping but not by nearly as much as it first sounds.

Datum, Geodetic: A set of constants specifying the coordinate system used for geodetic control, i.e., for calculating coordinates of points on the earth. At least eight constants are needed to form a complete datum: three to specify the location of the origin of the coordinate system, three to specify the orientation of the coordinate system, and two to specify the dimensions of the reference ellipsoid.

Dilution of Precision (DOP): A description of the uncertainty in a position fix can be described by several indicators. The more commonly used indicators are as follows:

GDOP Geometric (three position coordinates plus the clock offset in the solution)

PDOP Position (three coordinates)

HDOP Horizontal (two horizontal coordinates)

VDOP Vertical (height only)

TDOP Time (clock offset only)

RDOP Relative (normalized to 60 seconds)

Ellipsoid: In geodesy, unless otherwise specified, a mathematical figure formed by revolving an ellipse about its minor axis. It is often used interchangeably with spheroid.

Ellipsoidal Height (HAE): The measure of vertical distance above the ellipsoid. Not the same as elevation above sea level. GPS receivers output position-fix height in the WGS-84 datum.

Elevation Mask Angle: That angle below which it is recommended that satellites not be tracked. Normally set to a minimum of 10 degrees to avoid interference problems caused by buildings and trees and multipath errors.

Multipath: A term used to describe the effect caused by satellite signals reflecting off surfaces near the GPS receiver. This reflected signal is received along with the original signal and is a major contributor to error in GPS and cannot be corrected by differential correction.

PDOP (Position Dilution of Precision): PDOP is an indicator of the satellite's geometry in relation to the user's GPS receiver location. The smaller the number the better the geometry; therefore, the better the position.

Resource (navigation) grade receiver: A receiver that uses information in the satellites signal to calculate position. Examples of this type of receiver include the Trimble Pathfinder series, Magellan NAV PRO series and the Ashtech Ranger series.

Rover (remote) Station: A GPS receiver set up at an unknown location.

Selective Availability (SA): A Department of Defense program to control the accuracy of pseudo-range measurements, whereby the user receives a false pseudo-range which is in error by a controlled amount. Differential GPS techniques can reduce these effects for local applications.

SEP (spherical error probable): Statistical measure of accuracy; implies that at least 50 percent of the position fixes will fall within a sphere of the specified radius.

Survey (Geodetic) grade receiver: A receiver that uses the satellite's signal itself to calculate position. Examples of this type of receiver include the Trimble 4000 series, Ashtech M-XII series, Wild System 200 series and the Motorola Eagle.

Three-Dimensional GPS Data (3D Data): GPS data giving latitude, longitude and height of a point. (A minimum of four satellites must be tracked to obtain 3D Data.)

Two-Dimensional GPS Data (2D Data): GPS data giving only latitude and longitude position fixes using an estimated height. Since latitude and longitude are computed based upon the estimated height, the error of the horizontal position can be as much as twice the error in the height. This error is not removed by differential corrections to a base station, so 2D data is inherently more inaccurate than 3D data. (A minimum of three satellites must be tracked to obtain 2D data.)

User Range Accuracy (URA): 1) is an indicator that can be used to determine whether or not Selective Availability has been activated. A high URA (30 or above) is a good indicator of SA activation [Trimble], and 2) is a qualitative number showing the range accuracy of each satellite. The lower the number, the better the accuracy (0 indicates best accuracy: 8 or above means questionable accuracy - use at your own risk!) [Ashtech].

II. Definitions of collection methods:

A. **Static Absolute** - Uses only one receiver, accuracy can range from 25 to 100 meters spherical error probable (SEP) depending on the quality of the orbital data. Results are obtained in the field.

B. **Static Relative** - Uses two or more receivers, one of which must be on a position with known geodetic coordinates; accuracy can range from less than one centimeter (cm) to five meters depending upon the equipment used and the length of time on each station. All receivers track the same satellite signals. Resource Grade GPS receivers can obtain accuracies from two to five meters CEP. Requires post processing of data.

C. **Kinematic Absolute** - Uses only one receiver that keeps moving, records positions at a selected rate, accuracy can range from 25 to 100 meters SEP depending on the quality of the orbital data. Results are obtained in the field. This method can be used to obtain a large amount of relatively low- accuracy coordinates by mounting the unit to any moving platform.

D. **Kinematic Relative** - Uses two or more receivers, one of which must be on a position with known geodetic coordinates, (i.e., base or reference) while the other(s) (i.e., rover or remote) move to or along unknown positions. All receivers track the same satellite signals. Accuracy can range from less than one cm to five meters depending on the grade of the receiver, and the procedure used. Resource Grade GPS receivers can obtain accuracies from two to five meters CEP.

1. **Real Time Kinematic.** This method requires the receivers to have a communication link between them. All receivers track the same satellite signals. The results are obtained in the field. A lock on the satellites as well as the communication link must be maintained by the receivers at all times or the data would not be reliable for the positions obtained during the loss of the signals. Accuracy can range from two to five meters CEP.

2. **Low Accuracy Kinematic.** This method is quite similar to the Real Time Kinematic method with the exception of the communication link and the fact that the data collected must be post- processed. This method seems to be the most viable for many LIS related applications; coordinates obtained on corners of the Public Land Survey using this method could be incorporated into the geographic-coordinates database (GCDB). Accuracy can range from 2 to 5 meters CEP.

3. **High Accuracy Kinematic.** This method makes use of survey grade receivers. The important differences between this method and other kinematic methods are, 1) the rover must become stationary at the unknown station for at least three minutes, 2) the rover must occupy every unknown station at least twice, 3) all receivers must maintain continuous lock on at least four satellites, all of which must be the same for each receiver, and 4) if the rover loses lock it must return to the last occupied station and resume data collection. The data collected must be post-processed. Accuracy can range from 1 to 5 cm.

III. Procedures

A. Accuracies of **less than two meters** may be obtained using survey grade GPS equipment. These guidelines are for resource grade GPS equipment and do not intend to cover the more accurate applications.

B. To achieve an accuracy of **one to five meters CEP** the following minimum requirements must be true.

1. Two or more resource grade receivers must be used with either static relative or kinematic relative methods. The receivers must be able to be differentially corrected. Multi-channel receivers with once per second update rate must be used in high dynamic situations, such as data collecting from aircraft or moving vehicle.
2. The roving receiver(s) must be differentially corrected against another receiver (i.e., base), which is on a station, the position of which is known to be accurate to one meter or better.
3. For point positioning, at least three minutes at a one second collection rate (i.e., 180 positions recorded) must be spent on each station, and the PDOP value must remain below six.
4. It is recommended that you re-occupy each unknown point for another three minute observation, or retraverse your route, at a different time period. Another option would be to move the rover to a position with known coordinates once every hour. This would show the level of repeatability in your coordinates relative to the previous observation and give you a better idea of the accuracy of the coordinates.

C. To achieve an accuracy of **less than 25 meters CEP** the following minimum requirements must be true.

1. Only one resource or survey grade receiver is necessary and any autonomous method can be used.
2. Selective Availability (SA), which is a term used by the Defense Department to refer to the period of time when the signals from the satellites will be intentionally degraded, must not be in effect. ****Note**** Check your GPS equipment manual for the specific method recommended by the vendor to determine if SA has been activated. Methods, values, and terminology vary by vendor. The most common term to date is User Range Accuracy (URA). According to the Defense Department selective availability was reactivated in July of 1991 and will remain in effect until further notice. The level of its effect may change from time to time and anyone attempting to use GPS in autonomous mode should be aware that the accuracy may be different at different times and may change depending on what satellites are being observed. The only safe thing is to assume that when SA is activated you will not get an accuracy better than 100 meters in autonomous mode.
3. PDOP should remain below six.

D. If an accuracy of no better than **100 meters** is all that is desired, the following minimum requirements must be true.

Any resource or survey grade GPS unit used in any of the methods listed in section I. above.

The accuracies indicated above refer to a Circular Error Probable (CEP) which indicates that at least 50 percent of the coordinates obtained will fall within a circle of that radius 50 percent of the coordinates will fall outside that circle. For instance, if you set on a station for three minutes and your receiver gets a reading every second then at least 90 of the coordinates for that station will be within the circle. In addition, CEP refers to horizontal or two dimensional accuracy only. See discussion under CEP in definitions above.

IV. Final Product

In addition to the above requirements, the following information about the coordinate values must be recorded.

A. Which horizontal datum are the values recorded in:

1. NAD27 - North American Datum of 1927. Most information, including USGS topographic maps, are based on this datum.
2. NAD83 - North American Datum of 1983. GPS is actually using the World Geodetic System of 1984 (WGS84). There is very little difference between NAD83 and WGS84, and for the purpose of resource grade GPS and most survey grade GPS projects, the WGS84 values can be used directly as NAD83 values.

Software is available to convert (or transform) from one datum to another. The accuracy of these conversions varies with the amount of control available and the conversion program used. The difference between datums can be as high as 300 meters. Some GPS units come with conversion software, but be careful when using this software as it is usually based on a very large area and can degrade the accuracy of your coordinates. A transformation program put out by the National Geodetic Survey (NGS) called "NADCON" or one based on this program put out by the U.S. Army Corps of Engineers called "CORPSCON" is recommended and is available through NGS.

B. Which vertical datum, if any, are the elevations recorded in:

1. NGVD 29 - National Geodetic Vertical Datum of 1929.
2. NAVD 88 - North American Vertical Datum of 1988.

C. What Geoid Modeling Software was used if elevations are given:

1. Vendor supplied. (Which Vendor?)
2. Geoid 93 or Geoid 90, obtained from NGS.

D. What format are the coordinates in:

1. LATITUDE AND LONGITUDE - This can be either NAD27 or NAD83. Coordinates should be in degrees, minutes, seconds, and decimal of seconds. If not, please specify.
2. UTM - Universal Transverse Mercator Coordinates should be in meters. If not, specify the units.
3. SPC - State Plane Coordinates. If the State Plane coordinates are reported on the NAD27 datum, they should be in feet; if they are reported on the NAD83 datum, they should be in meters. If not, specify the units.
4. IDTM - Idaho Transverse Mercator. Meters are to be used for both NAD27 and NAD83 datums.

APPENDIX B-1 GPS COORDINATE RECORDATION FORM

NAME OF OPERATOR: ____________ DATE: ______ PROJECT: ___________

COMPANY NAME: _________________ COUNTY: _______________________________

DESCRIPTION of PROJECT:____

____

HORIZONTAL COORDINATE OF POINT (Attach list if appropriate): _______________________

VERTICAL COORDINATE OF POINT (Specify HAE or MSL): ___________________________

NAME AND MODEL OF RECEIVER: ____

POST PROCESSING SOFTWARE AND VERSION: ____________________________________

TRANSFORMATION SOFTWARE AND VERSION: __________________________________

GEOID MODELING SOFTWARE AND VERSION: __________________________________

NAME(s) OF CONTROL or BASE STATION(s) USED (Provide NAD 83 values):

#1________ LAT: ___◦ ' . " LONG: ___◦ ' . " HAE:_______ MSL:_____

#2________ LAT: ___◦ ' . " LONG: ___◦ ' . " HAE:_______ MSL:_____

#3________ LAT: ___◦ ' . " LONG: ___◦ ' . " HAE:_______ MSL:_____

HORIZONTAL DATUM	VERTICAL DATUM	FORMAT	METHOD	PLATFORM	TIME	RELIABILITY
1. NAD27	1. NGVD 29	1. LAT & LONG	1. STATIC AUTONO-MOUS	A. AIRBORNE VEHICLE	A. AUTONO-MOUS	1. < 2 METERS
2. NAD83	2. NAVD 88	2. UTM	2. STATIC RELATIVE	L. LAND VEHICLE	B. POST PROCESSED	2. 2-5 METERS
	3. N/A (HAE)	3. SPC	3. KINEMATIC AUTONO-MOUS	M. MARINE VEHICLE	C. REAL TIME COMM LINK	3. < 25 METERS
		4. IDTM	4. KINEMATIC RELATIVE	P. PORTABLE		4. ± 100 METERS
CODE: _	_	_	_	_	_	_

EXAMPLE CODE:

1	1	1	2	P	B	2
NAD27	NGVD 29	LAT & LONG	STATIC RELATIVE	PORTABLE	POST PROCESSED	2-5 METERS

APPENDIX C IGIAC POLICY ON PLANE COORDINATE SYSTEM FOR STATEWIDE GIS

Adopted October 12, 1994

As digital data for Idaho becomes increasingly available, there is more frequent opportunity and need to use these data for GIS analysis and applications that cover the entire state. Digitized map data from the US Geological Survey and other federal sources often are furnished in the Universal Transverse Mercator (UTM) coordinate system. This system splits Idaho into two zones, making it necessary to reproject data into a common system for statewide coverage. If one of the existing UTM zones is selected, excessive distortion and scale error can adversely affect results of GIS analysis. Other existing coordinate systems for the state also present this problem.

A coordinate system tailored to Idaho is needed for applications that cover the entire state, to provide acceptable accuracies without excessive distortion, and to permit 0.1 meter resolution in single precision with no more than seven digits. The Idaho Transverse Mercator coordinate system (IDTM) is designed to meet these requirements (Gem State Surveyor, Winter 1993).

The IDTM is hereby adopted by IGIAC as acceptable and preferred for statewide GIS use.

Technical parameters of this system are:

1. Measurement unit: Meter
2. Central Meridian: 114 degrees West Longitude
3. Central Meridian scale factor: 0.9996
4. Horizontal Datum: NAD 1927 (until NAD '83 is adopted)
5. Latitude of Origin: 42 degrees North
6. False Northing at origin: 100,000 m
7. False Easting at origin: 500,000 m

APPENDIX D INFORMATION ABOUT SPATIAL DATA STANDARDS

The GILS (Government Information Locator Service) is an activity to provide users with a way to access the vast amount of information collected and held by the Federal Government (documents, files, etc.). It provides a way of searching the information holdings using the Internet and search and retrieve protocols. In a metadata view, it provides elements that the GILS community participants have decided are useful for documentation, search, retrieval, etc. It is not specifically designed to address geospatial data.

The Spatial Data Transfer Standard (SDTS) is a specification that is used to transfer *all* aspects of geospatial data sets from one system to another. The SDTS can transfer a data set from system to system regardless of the software, hardware, media or other factors. It is essentially a language, file format, and media specification to transfer GIS data between GIS software packages that do not have a good intermediate exchange format. The SDTS contains a metadata section that includes the information participants in the SDTS development effort decided would be useful when receiving a data set from an outside source.

Most SDTS metadata elements are included in the FGDC metadata standard. The FGDC metadata standard is far more comprehensive, serving the purposes of data discovery and evaluation, not just those of data transfer.

The FGDC Metadata Standard, formally known as the "Content Standards for Digital Geospatial Metadata" is a set of metadata elements that can be used to describe a digital geospatial data set. The standard can be used to provide metadata for three primary purposes:

1. To document a data set for the originating agency/author's own internal use;
2. To document a data set for participation in a clearinghouse or other data sharing activity.
3. To provide metadata requested by geospatial data transfer format (such as SDTS).

The National Geospatial Data Clearinghouse (NGDC) is an implementation in software of the metadata standard and the ability to serve spatial data (often in SDTS) using field-searchable server software. The fields of the GILS Profile are a subset of those in the FGDC metadata (they can be fully nested) such that an FGDC metadata service could double as a GILS server. GILS is required of federal agencies (and some state agencies, now) for documentation at the database level, although it can be used to document data at the data set level, corresponding to the objectives for FGDC metadata.

For more information, the following gives the Web addresses for these activities:
GILS
http://www.usgs.gov/gils/

SDTS

ftp://sdts.er.usgs.gov/pub/sdts/www/html/sdtshome.html

FGDC Metadata Standard, Geospatial Data Clearinghouse, NSDI
http://www.fgdc.gov

APPENDIX E   STATE OF IDAHO POLICY STATEMENT FOR GEOGRAPHIC INFORMATION SYSTEMS

Background

In the past decade, governmental agencies and private industry have developed increasingly powerful computer systems designed to process and analyze map information. Collectively called geographic information systems (GIS), these systems have the potential to significantly increase efficiency and reduce costs to the State for conducting land, water, demographic, and other resource management activities.

GIS technology, much like the computer field in general, is in a period of dynamic evolution and growth. Moreover, GIS technology is but one of a number of related technologies (e.g., remote sensing and digital cartography) that could assist state agencies in carrying out their mandated responsibilities more efficiently. Indeed, these technologies are becoming ever more closely linked and are part of the information management activities of Idaho. Within this framework, it is imperative that emphasis be placed on coordination between the departmental organizations currently using or planning to use these technologies. This coordination will facilitate exchange of data between agencies.

Objectives

A. Encourage and assist in the development, implementation and use of geographic information systems to meet current and future statewide and departmental missions and objectives.

B. Establish an effective management and support framework for the orderly growth of geographic information system technology within the State.

C. Achieve and maintain levels of hardware, software and data compatibility in accordance with State standards and promote the sharing of technology, research, applications and data resources throughout the State of Idaho.

D. Encourage cooperative work among state agencies, universities, federal agencies and private associations to test, demonstrate and complete cooperative projects within their mandated responsibilities.

E. Coordinate development of statewide information predicated upon agencies implementing their own geographic information systems.

F. Develop a central catalog of geographic information for current and future agency and statewide applications.

Policies

It is the policy of the State of Idaho to encourage the utilization of geographic information systems when such use enhances the overall cost-effectiveness of administrative functions or improves productivity. It is also the State's policy to acquire and support geographic information systems through well-planned implementation strategies. These strategies include:

A. Develop and maintain data standards for base category data, statewide exchange data and, as needed, project data.

B. Develop and maintain contracts for state agency use covering the purchase of geographic information systems software and hardware.

Management and Organizational Responsibilities

A. The Idaho Geographic Information Advisory Committee (formerly the Idaho Mapping Advisory Committee) will be responsible for developing data standards for geographic information systems.

B. The IGIAC will be responsible for the development of specifications for the contract purchasing of geographic information systems hardware and software in conjunction with the state purchasing agent and the state data processing coordinator.

C. The acquisition and application of geographic information systems hardware and software will be accomplished in accordance with each agency's approved automated data processing plan.

D. The IGIAC will establish a standing GIS subcommittee to accomplish the following:

   1. Hold quarterly meetings for information exchange and work status review. Identify opportunities for exchange of data, joint production of data or the contracting of work between state agencies.

   2. Review needs for geographic information and determine data categories necessary for statewide applications. Establish and maintain an inventory of each category's collection status.

   3. Provide GIS informational and educational opportunities as needed.

   4. Work with agencies to implement the objectives of this policy.

APPENDIX F RESPONSES TO THE 1995 PANEL DISCUSSION QUESTIONNAIRE

Seven questionnaires were returned. Not all questionnaires had responses to each of the three questions asked. The following is a compilation of the responses to each question.

1. What is the role for IGIAC?

Remain a forum for implementation of policies.

Take on additional tasks as need arises; e.g., metadata homepage.

Move toward integration of various agencies' needs and suggestions.

Advisory and coordination

Annual Conference

Active subcommittees

Clearinghouse

More coordinating, which is a more active role than advisory

As a vehicle to coordinate many agencies together so we can share data

Lobby for its own sustenance

Seek legislative funding for metadata and metadistribution state/regional offices

Educate powers-that-be to the importance of GIS knowledge and products in land development and management

Make a pitch for consolidation of GIS resources into a central office being a means to reduce overall expenditures on GI data through elimination of some redundancies

Survey/summarize user needs

Create and maintain a list of who has what data. Make the list available on the Internet

Encourage and support developing and sharing metadata

Support subcommittee activities

2. What are your data coordination needs?

Comprehensive list of who has what data

Get metadata standard nailed down

A metadata format with which to begin cataloging our data

An Internet location where knowledge of GI data can be shared

Need to coordinate comman [sic] fish and game data base

Bring Fish & Wildlife data into GIS

Need to know about what data are available through other agencies. Only Lands and DWR make any real effort to publicize their holdings--among state agencies. Feds do a better job.

We are converting ADS data, DLG and CFF 7.5' files to ARC/INFO format. We (BLM) have a specific data model to populate our database.

Our needs are CFF, DLG files and, perhaps, 7.5' ARC/INFO coverages to convert to our data structure.

We also need to have up-to-date graphics and contacts for aerial photography. This would help us route the public to the appropriate place for photos.

Clearinghouse

Internet News Group that has a section where people can post their data needs. Included would be solicitations for additional cooperators who are interested in having data produced for the same area.

Need to know where existing data can be found. News group of Internet homepage would fill this need.

3. What specific suggestions do you have for IGIAC?

Coordinate efforts to establish a separately funded entity to gather and disseminate information on spatial data. Evaluate possibility of housing this effort in state library or university library.

Keep the annual conference. Perhaps a speaker/presenter would be good at one lunch

Support the Metadata Subcommittee. I would like to see Bob Smith's idea of setting up a subscriber service set up to manage a centralized data clearinghouse where agencies could contribute their data and the subscriber fee would allow for a state Resident Cartographer or maybe just a clerk to distribute the data.

Perhaps IGIAC could recommend or identify a few people to serve as contacts that people could call for ARC/INFO support. What I am thinking of is a hotline for local user support on software/hardware issues. This would help the local user community and I do not anticipate that it would impact the "experts'" time much.
IGIAC needs to be more aggressive in getting a statutorily-defined role, recognition of and state funding for GIS.

The new executive order should include a requirement to meet monthly to discuss and coordinate ongoing work. The dispersed structure of GIS in Idaho is a good thing; but the GIS players do not spend enough time coordinating with each other.

Cost recovery on data generation (as opposed to cost recovery for data duplication) is ridiculous. Data are generated for program needs and are justified on those grounds alone. If the data can be used by other programs, so much the better. But state agencies do not exist for the purpose of generating data and recovering costs.

Promote use of the Internet tool

Lobby state and federal and local politicians to promote the use and development of GIS and its products.

Promote the adoption of use fees and impact fees targeted to support GIS development and its products. Pay to play.

Concentrate on a database of metadata for now. See how it goes and get into geographic and attribute data stewardship later.

Assemble/distribute a list of e-mail addresses of IGIAC members.

Start a news group for IGIAC on the Internet. Do an electronic newsletter to post to the newsgroup--perhaps bimonthly. It can highlight issues and projects and help keep interest up. (Writer volunteered to coordinate this.)

APPENDIX G LIST OF 1995 IGIAC ANNUAL CONFERENCE ATTENDEE

NAME	AGENCY	PHONE	INTERNET ADDRESS
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Byron Cochrane	Id. Dept. of Lands	(208) 334-0271	
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David Couch	Ada County Engineer	(208) 364-2277	
John Courtright	IDEQ	(208) 373-0271	
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Bruce Eggleston	Boise City Planning	(208) 384-3830	
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Dawn Garrett	Power Engineers	(208) 378-6307	dgarrett@ram.pwereng.cc
Diana Gettinger	Scientech Inc.	(208) 345-6788	
Virginia Gillerman	Id. Geological Survey	(208) 385-4002	
Dave Gruenhagen	Id. Dept. of Lands	(208) 334-0277	
Hall Guttormsen	Id. State Tax Commission	(208) 334-7750	

NAME	AGENCY	PHONE	INTERNET ADDRESS
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Gene Heaton	Lockheed INEL	(208) 526-9154	mgh@inel.gov
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Diane Holloran	Ada County Highway District	(208) 345-7635	
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Larry Jones	Id. State Historical Society	(208) 334-3428	
B.E. Kelly	National Geodetic Survey-ITD	(208) 334-8476	
Bob Kukachka	NRCS	(208) 547-4841	
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Roger North	Id. Transportation Dept.	(208) 334-8223	
Denny Rafferty	USDA-FS	(208) 364-4138	
Doug Richards	Bureau of Disaster Services	(208) 334-3460	
Craig Rindlisbacher	Nez Perce Tribe, Lapwai	(208) 843-7392	

NAME	AGENCY	PHONE	INTERNET ADDRESS
Jeff Servatius	Ada County Assessor's Office	(208) 364-2314	
Dave Short	Id. Transportation Dept.	(208) 334-8918	
Robert Smith	Id. Dept. of Lands	(208) 334-0276	
Joe Spinazola	USGS-WRD	(208) 387-1390	jspinazo@usgs.gov
Loudon Stanford	Id. Geological Survey	(208) 885-7479	stanford@raven.uidaho.e
Robert Steed	IDHW-DEQ	(208) 373-0534	
Sara Stolz	Id. Dept. of Lands	(208) 334-0271	
Joe Tompkins	Boise Cascade	(208) 793-2242	
Luciel Vincent-Hixon	Id. State Tax Commission	(208) 334-7750	
Marsha Weil	Ada County Assessor's Office	(208) 364-2398	
Alan Westphal	USDA-NRCS	(208) 334-1525	
Luke White	INEL-Lockheed, Idaho Falls	(208) 526-1036	wlj@inel.gov
Wayne Wold	Boise Cascade Corp.	(208) 384-6368	
Dave Wood	Ada County Assessor's Office	(280) 364-2396	
Bill Yeager	BLM	(208) 384-3108	byeager@micron.net

HELP!

One of the major points brought up in responses on the questionnaires for the 1995 Annual Conference was that respondents wanted to see IGIAC take a more active role in providing on-going coordination and information about who was doing what and how they were doing it. To the extent possible, this issue of the Annual Report has attempted to satisfy some of that need and to assure that the information was up to date. However, we all know that the one thing we can count on is CHANGE.

In an effort to gather and distribute information about changes at your organization, news or updates on items such as new data, system capabilities or simply to share comments with IGIAC a form is provided that you can use. Please fill it out and send it to the address provided.

NAME OF PERSON REPORTING: ________________________________

ORGANIZATION: ____________________________ DATE: _________

CONTACT POINT: Phone _____________ E-mail address _____________

CHANGE OR NEWS ITEM: ____________________________________

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COMMENTS: ____

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Send to: Hal Anderson, Chairman
Idaho Geographic Information Advisory Committee
Idaho Department of Water Resources
P.O. Box 83720
Boise, Idaho 83720-0098